The INDEPENDENT SCHOOL Bulletin

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THE INDEPENDENT SCHOOL BULLETIN is published by the Secondary Education Board, Milton, Massachusetts, five times during the school year: in November, January, February, April, and May. Five copies of each issue are mailed without charge to every *active* member school; one copy to every *associate* member school. Additional copies are ten cents each plus cost of mailing. If more than five additional copies are ordered, the price per copy is five cents. The non-member subscription price is two dollars.

SECONDARY EDUCATION BOARD

MILTON, MASSACHUSETTS

SUGGESTED PROGRAM OF THE STANDING SCIENCE COMMITTEE

Should the Standing Science Committee:—

I. Foster the authorship and publication of textbooks and laboratory manuals at the Independent School level in (a) Biology; (b) Chemistry; (c) Physics; (d) Introduction to Science.

II. Present articles in THE INDEPENDENT SCHOOL BULLETIN, or issue mimeographed bulletins direct to member Science Departments, on selected material concerned with:—

- (a) Reports of teaching techniques and procedures, or information as to sources of such reports as may seem interesting.
- (b) Information on visual aids.
  - (1) Motion pictures and sources of rental.
  - (2) Other visual aids.
- (c) Extra-curricular material or projects used in member schools.
- (d) Reports of Science Club programs.
- (e) Applied Science Exhibits and Motion Pictures.
- (f) General articles from member Science Departments.
- (g) Make the Science Section of the BULLETIN a Symposium.

III. Engage in studies of the Science Curriculum and distribute reports; that is,

- (a) Undertake a study of existing reports from the U. S. Government Department of Education, College Entrance Examination Board, etc.
- (b) Undertake and report on a study of a suggestive Sequence of Science Topics to provide for:—
  - (1) A general background for every student.
  - (2) The student who will require Science as an integral part of life.
  - (3) Correlation of Science with Mathematics to give meaning to Algebra and Geometry — the material to be introduced at the proper levels either through Science or Mathematics courses.
  - (4) Foster the preparation of textbooks or bulletins of correlations with detailed suggestions and exercises.
  - (5) Expanding Science in the curriculum to include Physical Geography, Elementary Geology, etc.

IV. Establish examining committees when examinations are required.

V. Study and prepare reports concerning testing theories and practices.

VI. Assume responsibility for generating meetings of the Natural Sciences Section for the General Conference,

The suggested program was discussed at the first meeting of the Standing Science Committee and cast into this tentative form for presentation to the Science Departments of the member schools of the Secondary Education Board. It is evident that the Committee will require a great deal of help in meeting the responsibilities of such a program.

The Committee wishes to encourage active participation in any phase of the program by the Science Departments of member schools. Perhaps the Committee can serve as a clearing house for collecting ideas from teachers of Science who are interested and for distributing these ideas to all Science Departments. If it seems desirable, sub-committees may be generated to act on various phases of the program.

As a member Science Department:—

What do you think of a Science Symposium section in the INDEPENDENT SCHOOL BULLETIN? And what topic or topics would you like to have discussed?

In what sections of the program are you interested?

What suggestions do you have regarding the section meetings of the Natural Sciences at the Annual Conference?

Would you like to have several articles concerning the aims and organization of member Science Departments? From what schools would you like to have such reports come?

What criticisms, suggestions, or comments do you have of the program as presented?

The Standing Science Committee is ready to go ahead. We need your assistance in setting our course.

THE SCIENCES AS LIBERAL STUDIES

By William C. DeVane
Dean of Yale University

Editor's Note. Dean DeVane prepared for college at a southern private school with a strong classics curriculum. He took no courses in science before entering Yale. In his undergraduate years he selected several science courses, especially those in geology and anthropology. He took his doctor's degree in English and is a Professor of English in Yale. Recently he has been chairman of a committee engaged in re-examining the curriculum of the college, and in this connection he has written articles addressed toward educational problems. An account of the revitalization of the liberal arts curriculum at Yale entitled *Yale Tomorrow* written by Charles R. Walker was published in the *Atlantic*, June, '44, p. 90.

The human spirit is so constituted that it is hot for certainties and is exceedingly unhappy when things that have seemed certain and firm prove to be unstable. There is, accordingly, a strong tendency in all of us to impose stabilities where, often enough, there are none. A prime example of this tendency is the way we think of liberal education. Most people, and there are many educated persons among them, are prone to think that a liberal education consists of certain fixed subjects, and they often think no further than that. There is, indeed, some warrant for this belief, for some subjects or fields are in their natures more inclined to be liberal than others and more persistently come home to men's businesses and bosoms. These are in general those fields that deal with ultimate problems—philosophy, religion, history, and literature—the so-called humane studies.

Yet it is obvious to anyone who thinks about the history of education in the Western world that the studies which have liberated the mind of man from time to time have never been liberal or emancipating because they were made up of certain subjects which have been fixed since the beginning of time. At crucial moments in the history of Europe Mathematics has been the most emancipating of all studies; at other times it has been Greek philosophy and literature; at still other times it has been Astronomy, and at yet others the natural sciences. Each of these fields has great potentialities of life, and however seemingly dead at any moment is capable of revival. Like the cat, a good subject has many lives. The liberating principle for a society consists not so much in the content, *per se*, as in the function it serves at the time. For the individual, almost any substantial subject may prove a liberating and therefore a liberal experience. But we know to our cost that even the most timely and emancipating material may be killed deader than a door-nail by dull teachers, and we know also that an excellent teacher can make almost any subject an important and liberal one for the pupil. In a liberal education we must look for those materials, methods, and teachers which will widen the horizons and increase the freedom of the mind.

The failure of the natural sciences to maintain their great places as liberal studies is one of the most distressing phenomena in the education of our day. To the grandfathers of the young men and women of college age today, the natural sciences opened magnificent vistas and showed a world that was new and wonderful. All sorts of traditional misconceptions were to be discarded, and the world's great age was to begin anew, this time with truth as its guide. Some of that roseate glow which lit up the natural sciences in that new dawn still lingered when the fathers of the present students were in college. But now that vision has faded into the light of common day. The student in college today who does not specialize in a science hates those subjects and takes only those courses that he must take in order to obtain a bachelor of arts degree or to qualify for medical school. Most of them are utterly untouched by the scientific spirit. In college teaching, at least, the sciences have gone the way of the Classics, and, I think, for the same reasons.

Now this will in time prove a terrible loss to the scientists themselves for one large source of their strength will have been cut off at the root. A great many able men who should go into the sciences will never get over the first hurdle. But even more painful is the loss to the great mass of students who are not scientifically inclined. I think it is obvious that in this age which is so dominated by scientific ideas no educated man can form a rational and adequate philosophy of life without a broad knowledge of the main facts and implications of modern science. It has always been so in some degree. The thinker of any time has had to found his philosophy upon the best views of his time concerning the nature of the universe and the world he lives in—his place in space and time among the

atoms and stars, the elements of inanimate nature, the history of the earth, and the history of life on our planet. Only science can provide satisfactory answers to these fundamental questions and provide the framework for the modern man's conception of life. But now, I say it most regretfully, science fails to offer its answers to the non-scientific student, and he is left poor indeed.

Why has science failed in this most fundamental teaching? The chief reason is that in the last half century the sciences have changed themselves from liberating studies to professional training programs. The main aim of the sciences in our time is to train, not to educate, professional chemists, physicists, biologists, etc., and the student is hardly welcomed if he has not this end in view from the beginning. The first course in a science, largely populated by students who will take no more science if they can help it, is almost invariably professional in its intention. It is difficult to blame the individual scientist for this, or even the particular science. So vast have the fields become, and so immense is the new knowledge, that the sciences have had to specialize in sheer self-defense. Yet the result is deplorable, none-the-less. The teacher of science in this system is often very narrowly educated indeed, and he is so immersed in his specialty that he is notoriously, with some very honorable exceptions, the most traditional and unadventurous member of the college faculty. He is a far cry indeed from those great scientists and teachers of our grandfathers' time. As for the students, the hungry sheep do not even look up any more.

What is the cure? How can the sciences become emancipating subjects? There is no single panacea. We cannot call great teachers into being by asking for them. We will do no good by requiring the student to take more science as long as it is taught so professionally. The student who is not intending to become a professional scientist must at once become intimately acquainted with the major laws and the important problems in several of the sciences. He must get the panoramic view without being superficial. This means that we must increase the total amount of time which we allow in our curricula for courses in science and demand in college of the candidate for the bachelor of arts degree at least two courses of as much as seven hours a week including laboratory, one in the inorganic sciences, and another in the sciences which deal with living things. But, in turn, these courses must be designed specifically to meet the needs of the man in the program of the liberal arts, and the courses themselves must be liberal, historical and philosophical. It is now a good many years ago that William James said, "You can give humanistic value to almost anything by teaching it historically. Geology, economics, mechanics are humanities when taught with reference to the successive achievements of the geniuses to which these sciences owe their being. Not taught thus literature remains grammar, art a catalogue, history a list of dates, and natural science a sheet of formulas and weights and measures." But the word "historical" in relation to the sciences will bear another interpretation as well, and the seeker for a liberal education ought to get from the study of the sciences that vast sweep of time (as we measure it) in which stars and suns are made and unmade, according to the great forces and principles which govern them and their motions, in which the atoms and elements combine and disintegrate, and life itself begins and evolves under its own timeless laws. It is this large view, with the detail filled in, that I covet for the layman who does not intend to be a scientist.

TWENTIETH ANNUAL CONFERENCE

The Secondary Education Board will hold its Twentieth Annual Conference at the Hotel New Yorker, New York City, on Saturday, February 24. The sections in English, Latin, Mathematics, Modern Languages, Primary Schools, Religion, School Libraries, Science, and Social Studies will be informal open meetings, presenting for discussion topics of particular interest to the faculties and administrative officers of independent schools.

Professor John Finley, Jr., of Harvard University, will be one of the principal speakers of the Conference.

New York hotels are more crowded than ever this year, many filled for more than a month in advance. If you plan to attend the Conference and to stay in New York overnight, *we urge you to make your hotel reservations very early*. It is always possible to cancel them at the last minute if necessary.

In conjunction with ideas presented in the science articles of this issue, the reader would find another approach to the problem of the place of science in a general education in the report of the Natural Science Section Meeting of the Annual Conference of 1944, which begins on page 44 of the Secondary Education Board's *Annual Report for 1943*.

THE HUMANIZING OF SCIENCE TEACHING

By John Pilley

Chairman of the Education Department, Wellesley College

Editor's Note. Professor Pilley took a degree in Chemistry and taught Physics at Oxford. Dissatisfied with dehumanized conceptions of science, he was eager to develop a kind of science teaching which is of greater cultural value. At the invitation of the General Education Board he came to the United States in 1937 to make a study of science teaching in some of the thirty schools participating in the experiment of admitting students to college without College Board examinations. He remained to take the chairmanship of the Department of Education at Wellesley College.

The educational value of any teacher's work depends upon two main things. It depends upon the clarity with which he conceives of what it is of the greatest value for him to be helping his pupils achieve. It depends also upon the effectiveness with which he can help them in achieving it. The value of his work cannot however be any greater than the value of the things he strives to achieve. It is therefore of the greatest importance that he should constantly be considering whether the things he is striving for are the most important things to be striving for. It is of especial importance for the science teacher to do this since in science, more than any other subject, the traditional form of teaching has been based upon the research worker's conception of the subject and not upon the study of what conception of the subject would best serve in education. It is the neglect of such study that is responsible for the continuing estrangement between science and the humanities.

For science teachers, as with most other specialist teachers, questions as to what methods are best to adopt are so much more insistent than questions as to what purposes are best to strive for that the first are likely to absorb most of their attention. It might seem that this did not matter very much since thought spent in improving methods of teaching is obviously thought well spent, while no one would suggest that the things the majority of science teachers are striving to achieve are not of great educational importance, even though they might conceivably be improved upon. Even so, it is well to remember that a teacher who allows himself to become preoccupied with "method" may make the mistake of trying to follow methods of other teachers, without first seeking to attain the educational insight of which they are the expression; not realizing that this is like trying to acquire charm by going to a charm school. It is also well to remember that a teacher who is not clear as to his purposes may make an even worse mistake. He may adopt methods that have been proved to be effective in preparing young people for bombardment by particular batteries of tests, but that were worked out by trial and error without any regard to their educational consequences.

The majority of science teachers are of course far from being blind followers of approved methods. Even so the majority do not arrive at their conception of what it is best to strive for in their work by asking themselves what kinds of understanding and what kinds of ability are of the greatest educational value to their pupils. They ask themselves rather how they can best encourage in them the *particular* kinds of understanding and the *particular* kinds of ability that they associate with the *particular* conception of science that they acquired during the course of their own scientific education. This is very different with different teachers, some conceiving of science in ways which make their work of far greater educational value than that of others.

It is important that all who are concerned with increasing the educational value of science teaching should ask which of the current conceptions of science is of the greatest value in teaching and also which others, not generally current, might be of greater value. In doing this they must remember that there is no inherent need that the teaching of science should be bound by any particular conception of "subject." Subjects, like the Sabbath, were made for man, and if they are conceived of in ways that are not in the best interests of education they should be changed.

The conception of science which leads perhaps to the least valuable kind of science teaching is that which regards science as a body of facts which are independent of man's knowledge of them and which are received at Nature's dictation. According to this conception of science the human mind's function in acquiring scientific knowledge is receptive and leaves no mark of itself on the knowledge it acquires. Such a conception cannot withstand very critical examination, but is nevertheless held by many sci-

ence teachers, even if it is not always very clearly formulated. Teachers having this conception of science are likely to demand of their pupils little more than the kind of receptiveness through which they assume scientific knowledge is acquired in the first place. For them their pupils' main task is to understand what they are told, the laboratory being a place where (in the name of "experiment") the truths proclaimed by their teachers and set forth in the textbooks are demonstrated and verified. Teachers whose science teaching is of this kind would describe its educational value by saying that it gave their pupils an orderliness of mind while at the same time helping them gain a better understanding of the world in which they are living. Both these things sound important and the second unquestionably is so. There is however a great likelihood of the "science" taught in this way remaining largely verbal. Whether it becomes more than this or not, it is likely to crush the spirit of inquiry by its very authoritativeness.

In contrast to this kind of science teaching is the kind which recognizes that scientific knowledge is the product of human inquiry and takes a form which is in part determined by the nature of the mind in which it is conceived. According to this conception the educational value of science teaching arises not from the fact that it *imposes* a kind of order on the mind but from the fact that it gives young people practice in *achieving* order in their minds as they form the concepts which not only make the behavior of the things they are studying intelligible but which also bring them within the sphere of their control. Teachers holding this conception of science are of course eager that their pupils should acquire an understanding of what scientists have discovered. They insist however that for this to be an *active* understanding which will enable them to see beyond what they are told and devise things that are original, they must think through the whole reasoning which led to crucial experiments and to the inferences which were drawn from them. In their view it is a perversion of science teaching for young people to be taught to recite chemical formulae and to perform feats of chemical algebra before they have thought through the whole reasoning upon which the atomic theory rests and are quite clear as to the evidence for the molecular formulae they use. Such science teachers also insist that it is not sufficient for pupils to follow through the thinking and experimenting which others have done: they insist that their pupils can only learn what scientific inquiry and invention are by attacking real problems themselves.

Such science teaching is unquestionably of far greater educational value than the kind which regards science as a body of fact independent of human imagination and judgment. Even so it comes in for a good deal of criticism from teachers who maintain that it is too much concerned with the theoretical aspect of science and too little concerned with its human aspects. In making this criticism they point out that science is a social achievement whose advance has been the result of the interplay of social forces of various kinds and that, in this, a kind of cross-fertilization between science and technology has been of the greatest importance. They also point out that science has transformed not only our material environment and our ways of living but also our habits of thought. They maintain that if science teaching concerned itself more with these other aspects of science it would not only become of greater educational value but would do so in a way which would make an end of the estrangement between the sciences and the humanities.

This suggestion for broadening our conception of science and, with it, of science teaching, is one that is having considerable influence today. But though there can be no doubt about the importance of young people gaining an understanding of the social development of science and of the part that science and technology are playing in the modern world, it is quite a mistake to suppose that a greater emphasis upon *these* things would make science teaching more humanistic. The most it would do would be to bring it into closer relationship with other studies such as sociology in which the main emphasis is objective and scientific.

For any teaching to be deserving of the name humanistic it must help young people to gain a greater understanding of the modes of thinking which human beings develop in striving for all the various kinds of things they value, of which scientific understanding is but one, and of which a better understanding of what is of value, the most important. This is something that they can only achieve by reflecting upon what they themselves do in striving for the things they value. Just as they can only understand what it is for others to hope, or to doubt, or to fear, by knowing these things in their own experience, so also can they only understand all the various things which others do in striving for the things they learn to value and to strive for. This does not mean that humanistic teaching is

unconcerned with the environmental influences which play their part in making people what they are. It recognizes that it is only through an understanding of the conditions under which human beings are striving for the things they value that it is possible to understand what they are contending with in striving. It is only then that the striving itself can be understood. It is, of course, possible to make a study of human beings and of human societies which concerns itself only with such elements in their observable behavior which can be traced back to ascertainable causes. Such a study can never give more than a very incomplete account of human affairs since it leaves out of account all the kinds of thinking and doing through which human beings extend not only their understanding of themselves and of the world in which they are living, but also their understanding of the things most worth striving for. Since however it is by virtue of their ability to strive for the things they understand to be good (however mistakenly at times) that human beings are human, such a study should be described as a study of human beings in so far as they are *not* human but only creatures of circumstance. In saying this it is important to notice that it is only by virtue of the kind of imaginative thinking which this kind of study leaves out of account that the study itself is possible.

In line with all this we can say that the science teacher who is seeking to develop a more humanistic conception of science teaching must give up the conception of science in which the whole concern is with achieving objective results. He must also cease to be satisfied with his pupils developing only an intuitive sense of scientific inquiry. Instead he must encourage them, throughout his teaching, to study not only the various kinds of activity upon which scientific discovery depends but also the activities through which are acquired the preliminary understanding necessary for making new discoveries. Nor is this all. For his teaching to have the greatest educational value he must also help his pupils understand how the activity called science differs from, and is related to, other human activities in which imagination and judgment are active and most especially to those which lead to artistic achievement and to the achievement of mutual understanding between human beings. In all this it is of the utmost importance that the teacher should have it clearly in mind that it is impossible for his pupils to achieve an understanding of any human activity by the kind of objective study through which he understands the behavior of chemical substances. His pupils can only gain an understanding of the kinds of thinking upon which science or art or the achievement of personal understanding depend by studying them at first hand in their own experience, and this is something that they can do only in such measure as they have achieved proficiency in these various kinds of activity. It is only with this as a basis that they can gain insight into what others, more proficient than themselves, are doing in these various ways. It is only then that they can increase their own proficiency by learning from others.

Part of what is necessary for giving young people a more humanistic understanding of science is already done by the large number of science teachers who plan their work recognizing that it is only through the practice of scientific inquiry that their pupils can gain proficiency in it. Even so, it is only a small proportion of science teachers who would say that their pupils would gain anything of great value from discussions aimed at helping them gain a greater awareness of what they were doing in the course of scientific inquiry. In saying this they would not be denying its value in encouraging a more humanistic understanding of science. That, according to the traditional conception of science teaching is not their concern. They would be denying its value in helping their pupils to a greater proficiency in scientific inquiry itself. If they believed that discussion of the principles of scientific inquiry would help their pupils in this they would no doubt do more of it, regardless (in the first place at least) of whether it fostered a more humanistic understanding of science or not. In view of this it is well to ask why science teachers are, on the whole so skeptical about the value of this emphasis in science teaching.

A good deal of the skepticism arises from the traditional suspicion amongst scientists of anything savoring of philosophy. This is strengthened by the knowledge that such experiments as have been done in the name of "teaching scientific method" have had very disappointing results. The reasons for these results being so disappointing are not difficult to understand and, when once they are understood, they should make an end of the skepticism. One of the main reasons is that in most of the experiments the teachers restricted their discussion to the ways in which hypotheses were put to experimental proof, and said almost nothing about the forms of thought which characterize science. Nor did they ask themselves what kinds of sci-

ence teaching did most to encourage scientific imagination. Instead they were inclined to assume that "problem solving" is a totally different kind of activity from that through which students of science, by interpreting the written and spoken words of others, enter into an understanding of what is already known. Most of the experiments left out of account the fact that students can only acquire a sense of scientific problems by learning to use their imagination and judgment in thinking their way through the steps by which others have arrived at, and have proceeded in solving problems from the very first beginning of their study of science. If the student's preliminary studies in science have consisted merely in their accepting the conclusions arrived at by others with just enough laboratory demonstration to make the conclusions intelligible, it is not likely that their scientific imagination can be awakened by a kind of artificial respiration.

Because of the disappointing results of most attempts to teach "Scientific method" many teachers have been far too ready to assume that *no* kind of discussion of the principles of scientific inquiry can be of any help and that students must be left to themselves to learn the art of inquiry by practicing it. But to assume this is like assuming that students learn best to play piano by playing it, and that no discussion of harmony and counterpoint or even of the art of fingering can be of any help. It is true that harmony and counterpoint can be taught in ways which crush musical sensibility, yet they can also be taught in ways that help the student gain a fuller understanding of what he is doing (and of what he is failing to do) in playing. If taught in this way they can give him a power of playing much more understandingly and imaginatively. In the same way a discussion of the nature of scientific activity can help a student gain a much greater proficiency in it provided the discussion is effective in helping him gain a greater awareness of what he is doing (and failing to do) in it. In science, as in piano playing, it is the enhanced awareness that matters. The study of the principles of science, like the study of the principles of harmony, are only of value when they serve in that. If the study of principles is ever regarded as an end in itself, or if it is not sufficiently closely related to what the student is himself learning to do, it may cramp his imagination instead of giving it greater power.

In fact, no science teacher really leaves his pupils to themselves in gaining proficiency in science. Even the teacher who regards it as his main purpose to give his pupils an understanding of scientific conclusions makes some reference in his teaching to what scientists *do* whenever he speaks of such things as their *comparing*, or *analyzing*, or *explaining*, or of their reaching *agreements* with one another. He also makes use of these same words in giving his pupils instructions as to what to do, in discussing how successfully they are doing it, and in helping them to do it more successfully. Thus the science teacher who encourages in his pupils a humanistic conception of science does not differ from the science teacher who does not, in being the only one concerned with helping his pupils in the art of inquiry. The difference lies in the fact that it is only the humanist teacher who encourages his pupils in a *conscious* understanding of the nature of scientific inquiry.

The science teacher who is concerned with encouraging his pupils in a humanistic conception of science may at times require them to give their whole attention to questions about the nature of scientific inquiry. In this there is always the danger of his pupils remembering what he says without using it to extend their consciousness of what they are doing and through that their effectiveness in doing it. When this happens his teaching may turn into a dry rigmarole of the kind that poor grammar or harmony teaching are so notoriously likely to become. With younger students the danger is especially great and the best way of guarding against it is for the teacher to proceed mainly by saying the things he has to say as a kind of running commentary (and as a running questionnaire) on the things his pupils are actually doing in practicing the art of inquiry. Even so it is important for him to be clear as to the things that it is most important for young people to begin to understand about scientific inquiry as they begin the study of science. Amongst the most important that young people should clearly understand by the time they reach the third grade are perhaps the following: —

1. That people in starting upon a study of science are not acquiring a kind of knowledge which is of an entirely different kind from any that they have been acquiring in their everyday living. Much of the knowledge they first acquire comes through a scrutiny and correction of everyday knowledge and provides a basis for further knowledge. A beginner in science can easily be made to see that when, in his early childhood he began to distinguish between hot and cold, or between cows and horses, and began to

recognize the changing seasons he was taking his first steps in science.

2. That people learn about the world in which they are living, and about themselves, by finding in the words of others, clues to a further understanding of what they see going on in the world around them and of the things they learn to do. In doing this they are only carrying further something that they began to do when they first discovered meaning in the words of others. Their advance in understanding is, at one and the same time, an advance in understanding the behavior of things, and an advance in understanding the language in which others express the ideas which make their behavior intelligible. The beginner in science can be helped to realize that the questions he asks are as much about the meaning of words as they are about the behavior of things. He can also be brought to understand that his practical sense of things and people is something that goes far beyond anything which can be expressed in words, but that it is only that part of his understanding that can be expressed in words that others will agree upon, that can be called scientific.

3. That people, in studying science, learn to look at things with a view to discovering their resemblances and then go on to discover further, relationships that are easy to recognize, such, for example, as are referred to by such words as "power" or "cause." As people progress in science their interest turns away from particular individual things such as a pet animal, or a particular house, and become interested in the general characteristics shared by *kinds* of things, and in the *kinds* of relationships found to exist between *kinds* of things. This however is, once again, a special development of something which every child is learning to do as he learns to use common nouns, and verbs, to refer to kinds of things and to kinds of actions.

4. That from the beginning of a person's study of science he is learning to use, in a precise way, words which in everyday conversation he uses only in a vague way. As part of the same learning he learns to develop ideas that make the behavior of things more intelligible and brings them more under his control. An example of this from a very early stage of science is the substitution of the scientific conception of heat (and temperature) for the more vague popular conception of "heat".

5. That from the very beginning of their study of science, people learn to form ideas that have progressively less reference to their feelings and preferences, and more and more to the structure of the things they are studying, and to their relationships with one another. They learn, for example, to replace the subjectively based conceptions of heaviness and hotness by objective conceptions of weight and temperature based on references to balances and thermometers, and to accepted standards of measurement. As part of the same development they learn to suppress their feelings of liking and disliking of any of the things they study, or of any of the conclusions towards which the evidence is pointing, and concern themselves only with the "facts."

6. That an important part of what people must learn to do in reaching scientific conclusions is to understand the various ways in which the observations made by different people may differ, and going on from this to understand how conclusions may nevertheless be reached which are independent of any particular observer. The easiest kind of difference to understand is that which arises from observers having a different point of view in the literal sense. With this as a beginning it is not difficult to go on to understand how differences arising from such things as color blindness, or carelessness, or prejudice, may be reconciled.

7. That people, as they make headway in science, learn to keep out of it the idea that anything behaves as it does because it wants to, or has a purpose in doing so. Instead they give their whole attention to discovering the causes of things being as they are, and behaving as they do. The beginner in science can easily be helped to see how quickly the idea of purpose is dropped in the study of physical objects, and how it begins to be dropped as he studies plants and even animals. This prepares the way for vitally important discussions of the differences between animals and human beings.

These are but a few of the facts about science that a teacher, intent upon giving his pupils an understanding of what they were doing in extending and in using their understanding of science, would want his pupils to become clear about as a result of his teaching. It could be objected that to mention such facts to beginners in science would only confuse them since they are "obviously" outside the range of their comprehension. This objection is however based upon a quite arbitary conception of what children are, and are not, capable of understanding; as anyone who has had experience out of school

with third grade children would recognize. It would be most likely to be raised by those who, in spite of their years, have never very clearly understood these facts about the nature of science themselves. For this reason they would be likely to discover, if they tried the "experiment," that confusion *did* result when they tried teaching what they supposed these facts to be. A further objection might be, that to mention such facts is unwise because questions about them lead on, quite quickly, to the threshold and beyond the threshold of philosophy. It is true that any inquiry into the nature of science leads on ultimately to such ultimate questions as "what is logic?" and "what is the relationship between fact and value?" But to object on these grounds to drawing pupils' attention to facts about their own activities which they not only can easily understand, but are also keenly interested in, is as unreasonable as it would be to object to any discussion of acceleration as it led on at once to considerations of relativity.

For a science teacher to teach in a way that will encourage a more humanistic conception of science (and with it an understanding of science that is more humanizing) it is not enough for him to have an understanding of the nature of scientific activity as something apart from other human activities. He must also have a clear understanding of the main facts about the relationship of scientific activity and other kinds of human activity. In practice all human beings have a sense of this though not everyone has reflected enough about it to have the kind of clear understanding necessary for good teaching. In practice we all recognize that in our relationships with other human beings we use our imaginations in ways that are quite different from those in which we use them in science. We also recognize how we may change our attitude to other people from one which is personal and friendly to one which is impersonal and scientific as when, for example, we take refuge from a person who is boring us by finding interest in him as an example of boringness. A more articulate understanding would reveal that the kind of thinking that we do in our personal relationships is characterized by the fact that we recognize other people to be free and responsible people in the same sense that we also are free and responsible people. Not only their feelings, but also their powers of imagination and judgment are of the same kind as our own and enable them to know us in the same way as we also are able to know them. When we collaborate with others in scientific inquiry we may be mainly interested in their judgments of fact, but in the course of it we gain some insight into what they are doing in arriving at judgments of fact. At the same time we can never altogether ignore what they are as human beings and in this we judge them by the degree to which they know and strive for things that are good even as they do us. In this our thought is of a quite different kind from that which characterizes science. Even so it is out of this matrix that scientific thought develops.

The thought which young children acquire as they learn to take their part in the community of the home does not have any special emphasis of the kind exemplified by science but fills the whole span which it has in personal relationships. If, when children begin to study science they are not helped to see how scientific thought grows out of this wider kind of thinking, as a special kind of interest is pursued, they may go on indefinitely in their scientific studies without recognizing it. To ensure that children recognize how scientific thought differs from that upon which friendship depends it may be best to begin by encouraging them to think that the difference arises from the difference between people and things, and leave it until later to get them to see that the more basic distinction is between different modes of thought as is so clearly illustrated by the fact that it is not only possible to think of a child as a domestic pet, but also to think of a domestic pet as though it were a child.

To begin with emphasizing the difference between people and things is at least some safeguard against the belief that so many young people interested in science have so firmly embraced by the time they are in high school; the belief that human beings are nothing but complicated kinds of things. Their own behavior as human beings is, of course, a standing disproof of this belief though they do not recognize it. Even so they do not behave to others in ways which are an expression of the belief. Yet the fact that they hold it is an unhappy sign that they cannot be doing much of the kind of moral reflection that makes for better relationships between human beings.

It is to be hoped that influences other than those of teachers are at work today undermining this soul destroying belief, but that does not in the least mean that there is any less urgency for science teachers to assist in the task. Anything they succeed in doing through their work will mean that they have succeeded in making their science teaching more humanizing.

THE MUSEUM AND EDUCATION

By Armand N. Spitz

The Franklin Institute

Editor's Note. Armand N. Spitz brings a realistic and dynamic point of view to a sharp focus in the many things he does as Director of Education and Head of the Department of Meteorology of The Franklin Institute. He is also a lecturer at the Fels Planetarium which is a part of the Institute. He says of himself: "Have never actually taught school — gave miscellaneous lectures at various schools — I am *not* an educator — don't know anything about it — do have classes in meteorology, however." Mr. Spitz is a prodigious and enthusiastic worker. He is aware of difficulties and troubles in using existing equipment and he is ingenious in devising methods which eliminate difficulties. His books *Pinpoint Planetarium* and *A Start in Meteorology* are representative of his efforts to clarify subject matter for the layman.

When Johnny comes to school in the morning with a picture of a B-29 which he pastes on the blackboard . . . when Sally comes in to report upon a radio program she heard the evening before which referred to something that was studied in school the other day . . . when Jerry pumps up his bicycle tire and notices that the barrel of the pump gets hot . . . these are behavior patterns of youths more audio-visually minded than ever before.

Visual aids of all kinds are of unquestioned value in the school. Individual pupils carry their search for audio-visual aids to other places than the classroom. In the last few decades teachers have learned to illustrate their subjects with static or moving exhibits, pictures, scrap books, dramatic presentations, slides, movies, records, and broadcasts. The last decade or so probably produced the greatest advance in this educational field, particularly in the use of teaching aids outside of the schools as well as in them. Extra-curricular audio-visual-mindedness is very definitely on the increase today.

All agencies seem to conspire to make a student keep his eyes and mind more alert, whether in school, on the street, in the theater, or at home. It is a triumph of this field of education that it can carry on its effective operation even in off hours.

Museums are traditional adjuncts to schools. In any community where there is a museum whose collections can be directly or indirectly correlated with the school studies, teachers have been alert to take advantage of the facilities of such an organization. Wherever possible, therefore, schools have become museum-minded, have taken pupils on visits to museums, and have made a consistent effort to bring museum technique into the school building. A small case of multi-colored stones collected by students, a display of commercial posters, or an expensive piece of demonstration equipment play equally substantial roles in making studies more vivid.

The value of museums is recognized, but there has been too widespread an attitude of accepting museums and their offerings, expecting the correlation between classroom and museum to be obvious without the expenditure of effort. No one who has had the experience either in museums or schools can possibly deny that the museum's potential function is weakened greatly if a visit to it is regarded as only an afternoon lark or a break in the routine of classes. A number of museums spend vast amounts of time and effort to correlate their activities with those of their local schools. Many schools in suitable localities have also devoted a substantial amount of research to this problem.

The Franklin Institute has for more than a century been one of the outstanding museums, not only in the Philadelphia area but in the country. It has long been conscious of the obligations which accrue to it in rendering adequate service to schools in the territory it covers. That such a program should be adopted by The Franklin Institute is highly logical, since the original function of the Institute when it was founded in 1824 was to provide a means of specialized education for people who otherwise might not have been able to get this training. Not only was a wide variety of scholastic work entered into more than a century ago, but the classes became so effective in the community in the eighteen-twenties and thirties that some of the present day functions of Philadelphia schools are traceable directly to the courses inaugurated by The Franklin Institute.

At one time during Benjamin Franklin's many-sided career, he underwrote the cost of inaugurating a traveling show which went from community to community with a lecturer who performed electrical experiments and demonstrated electrical equipment. Certainly this can be regarded as one of the earliest projects in the field of audio-visual education, and to pattern an entire museum on such a practice was re-

garded as a worthy tribute to the Institute's patron.

Therefore, when The Franklin Institute's present monumental building was planned, it was decided that the most effective way of honoring Benjamin Franklin would be to erect a structure in which visual aids to education in the field of the physical sciences could be collected and shown in a well integrated plan.

More than a decade has now passed since the museum was opened. There has been a constantly growing recognition that the areas of education touched upon by the Institute's various departments are probably more numerous than those which can be claimed by any other museum in the country. The subjects treated run the gamut of the physical sciences: seismology, astronomy, chemistry, petroleum, papermaking, transportation, and applied physics.

It is not at all surprising to realize that as soon as the Museum and Planetarium of The Franklin Institute were available to the public, nearby schools took advantage of these facilities and began to make scheduled study visits. In the beginning these were usually more or less haphazard tours which resulted principally in tired feet and whirling heads. Not at all infrequent was the comment that a further trip to The Institute was unnecessary because the visitor had already been there. Of course a survey tour of the highlights can be made in one afternoon, but it is likewise true that serious students can spend many visits in any one of a number of different sections studying individual exhibits and learning things about hundreds of subjects which could be absorbed nowhere else in as dramatic a form.

Institute officials realized that it was necessary to help teachers to make more effective use of the museum. The fundamental necessity of scheduling a limited number of subjects for each visit was stressed by The Institute's educational authorities, and written material was prepared to help teachers in following such a program. Data was collected to send to teachers before the visit of their classes to the museum so that they would know what exhibits would help in any desired angle of their subjects. By adequate advance preparation it would then become possible for the schoolman to plan the most effective use of the museum when he and his students arrived.

This material has now been available for several years and has been used by many teachers who take their work seriously. Others have asked for the information, but there has been no way of checking upon its actual use. Still others have expressed their interest in its existence, but have so far not used it to help them in correlating their class work with the museum. Still others say that they haven't heard about it even though word has gone out to the principals of every public, private, and parochial school in the Philadelphia area.

The response from those teachers who have followed through with a well integrated plan has been most enthusiastic. A number of teachers have used the teaching aids produced by the Department of Museum Education as a springboard from which to devise their own written forms which may fulfill their needs more completely than anything which has otherwise been made available. Whenever possible, copies of these outlines are collected by The Institute and are held for use in similar groups. Credit is given to the teacher who has developed such a new approach.

One of the most encouraging developments has been the use of the museum's facilities in other than scientific classes. A group of classics teachers of the Philadelphia area has for several years been bringing Latin students to the Planetarium for a special demonstration in which the mythological stories of the stars are told. Such an implementation of a classics course by an astronomical instrument is, we believe, audio-visual education of the purest form. Teachers of history, or of geography, will bring their classes to see the Hall of Marine Transportation and of Railroad Engineering. Students of economics will visit the Chemistry section for a look at the plastics exhibits, and students of sociology will spend an afternoon in the Hall of Lighting and Illumination.

Effective this Fall, the Philadelphia Board of Education has assigned to The Franklin Institute one of its teachers who has had museum experience to help in coordinating the exhibits of The Institute with the work of the schools. She will spend part of her time in the museum actually escorting school groups from section to section in accordance with a prearranged study plan. She will cooperate with teachers in developing such plans if they do not have a definite notion of what points they wish to stress. She will take full advantage of the Board of Education's visual education facilities in handling school groups which come to the museum, and she will pay visits to schools to discuss the greater use of The Institute with teachers and to encourage students to come on their own.

To make individual student visits possible, an unlimited number of tickets entitling pupils to free admission to the Museum or Planetarium are distributed annually to the public and parochial schools of Philadelphia. Other schools in the area are given special educational discounts. All teachers of all schools are entitled to identification cards which grant them unlimited use of the Museum and Planetarium without charge. They are also given special consideration in that form of Institute membership which includes the use of the world-famous scientific library.

A series of conferences with teachers of various subjects brought forth the frequent opinion that they would like to teach some astronomy, but that there were two major difficulties: first —the teachers had not themselves studied astronomy; and second—the demonstration equipment necessary was both too elaborate and too expensive. This caused the agile mind of one of The Institute's astronomers to produce a suggestion for a so-called "Astronomy Clinic," the announced intent of which was to teach teachers how to teach astronomy with the aid of equipment which they could easily make from odds and ends to be found in a desk drawer, or in the five and ten. When a query was sent out late in 1943, to sound the interest in such a series of lectures, it was a gratifying response when more than two hundred replies were received. The Department of Museum Education was surprised and sceptical, thinking perhaps that teachers were simply interested in getting something for nothing. A second letter was sent out asking for further information to indicate whether the interest was bona fide, and urging advance registration. More than three hundred registrations were received. Interest grew, and finally four lectures were given on four consecutive Wednesday afternoons. The average attendance was three hundred and fifty, and nothing other than high praise has been received for the way in which the project was conducted. Representatives of the Philadelphia Board of Education and Pennsylvania Bureau of Public Instruction were enthusiastic in their commendation of this admittedly experimental effort in teacher training.

To help in making more usable the material presented in the "Astronomy Clinic" a Teacher's Manual was prepared and sold for its cost. This booklet gives an outline of a number of lessons which can be presented even though a teacher has had no training in astronomy, and it gives instructions for the manufacture of simple demonstration equipment. (A few copies of this Teacher's Manual are still available and will be sent upon receipt of 35c.)

The Astronomy Clinic gave rise to so many requests for similar clinics in other subjects that this possibility is very definitely being considered, but it will probably have to be set aside as one of the high priority post-war undertakings. It takes a substantial amount of time to develop such a series. The proposed clinics on general science for elementary schools and meteorology for secondary schools will probably not be offered for a period of a year at least although they are definitely in prospect.

One project in teaching-training which is being planned for earlier action is a conference-tour to which teachers will be invited in groups. The purpose will be to show teachers the proper use of the museum's facilities and to outline those functions and services which do not readily meet the eye.

In connection with the work of teachers in Philadelphia schools, an effort is being made to study textbooks now in use so that The Institute's exhibits may be correlated with these texts as closely as possible. This program is likewise a comparatively new one and will require a substantial amount of well coordinated work before results are evident. Great interest in this program was expressed by some of the teachers attending the Philadelphia School District Workshop during the past summer, and several teachers have volunteered their help.

One of the problems which has been facing all secondary schools in recent years is that of preparation of their senior boys for military service. At the suggestion of the headmaster of a nearby private school, a special course in astronomy and meteorology was designed, purely as an experiment, to give a practical background which might be of some use in Officers Candidate School or in a flight training program. As a guinea pig project, it gave valuable information to The Institute upon which to base the consideration of similar courses which might be offered to schools as collateral training.

A new project was launched this Fall in the form of a popular science radio program slanted toward grades three to six. A steering committee was appointed representing public, parochial, and private schools, radio station WFIL, and The Franklin Institute to discuss such a series. Entertainment value is being stressed in these broadcasts, which are called "Science is Fun."

The scripts were prepared by the Radio Committee of the Philadelphia Board of Education with the cooperation of Institute staff members. A Teacher's Manual has been prepared to point the way to better use of the broadcasts. (Copies of this Teacher's Manual may be obtained by writing to the Educational Director, Station WFIL, Philadelphia, Penna.) An evaluating committee is being appointed to serve throughout the Philadelphia area to study the reaction of students to this program. Another radio program, this one for the high school level, is being produced over Station WIP. It stresses the stories behind the exhibits in the Museum.

In the past The Franklin Institute has had traveling shows which went from school to school all over the country. One was devoted to chemistry and the other to aviation. These programs of dramatic entertainment based upon science and presented under the auspices of The Institute attracted tremendous interest wherever they went. They have been suspended for the duration of the war, but it is planned to resume them and to expand the field very early in the post-war period.

We well realize that we have just begun to scratch the surface. We want and need the help of teachers in seeing our future course more clearly. We welcome visits by teachers from all parts of the country, and, if possible, will be glad to know in advance of their coming. While the facilities of The Institute are obviously primarily indicated for schools in the Philadelphia area and in the State of Pennsylvania, we are proud, whenever the call comes from distant parts of the country, to be able to render some service to a science teacher.

Wherever there are museums, schoolmen will find that there is more than willing cooperation to be had for the asking. Museums reach their fullest function when they are drawn upon freely by all who teach. The burden rests upon those who teach to take advantage of the help which is gladly tendered. The wise schoolman does not have to be urged to contact a museum for aid in his educational program.

EGGS WITHOUT SHELLS

By W. J. R. Taylor*

Middlesex School

Editor's Note. This article comes from Mr. Taylor's desk in the Thoreau Museum at Middlesex School and from the immediate vicinity of Walden Pond.

Sept. 22, Wednesday. Today, ten thousand greetings! Put a hundred and twenty old boys and masters together for the first time in three months, each greeting all the others, subtract a conservative third, and you have just about ten thousand howdies.

Several Tenth Graders were asking me about electing Biology instead of Latin. The day may come when the Faculty speak of Student So-and-so, who should take Latin because of his Biology difficulty. I once threatened a smart loafer with dropping him out of Biology into Latin, and in two weeks his grade jumped nearly twenty points.

Some of the Seventh and Eighth Grade tykes, most of them resplendent, for the time being, in new, large (he grows so fast) clothes, inquired eagerly about subject matter.

Sept. 26, Sunday. Took four boys with lunches, field glasses, a local contour map, compass and bird finder to Strawberry Hill, by road. Mrs. B. was kind enough to let us into her observatory on top. From there we could look out over the trees to the roofs of the school buildings and other landmarks. There we lunched, too, and oriented ourselves on the map.

Having returned the keys, and our thanks, to our hostess, we came home across lots in the straightest line possible, through thickets and woods, and over marshes and plowed fields. There we looked in vain for arrowheads, finding only a half dozen rather doubtful flakes. At one point we discovered an odd little trench with steeply sloping cut-stone revetments. In the bottom lay clear water, about a foot deep, with a choice assortment of drifting frogs. The inevitable occurred. One boy over-reached, got rather well soaked.

Sept. 29, Wednesday. A regular school day, but one so fine that nobody wanted to stay indoors. So, after telling each class in its turn to review today's lesson for tomorrow, and besides

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to hand in notes on today's trip, we went out with dip nets, pails, jars and pans to rink, pond or brook to collect plants and animals for the aquariums. Excellent catches were taken of insects, small fish, frogs, tadpoles, newts, a baby turtle or two, bladderwort, and many other organisms.

In spite of warnings, the new boys are sure to be disappointed at the initial high mortality in the tanks, and at the slow, mysterious, shrinkage of numbers later on. They will be chagrined at the way the water turns green. But gradually they will discover that these changes are to be expected on account of the new, different conditions, the operation of the food cycle, and the multiplication of unicellular plants. Then the disappointment will diminish. From it all will emerge a clarification of the pattern that is the tapestry of life.

Oct. 5, Tuesday. This morning I tried earnestly to persuade my Biologists that science is only a tool, like a hammer that could be used equally well to build a house or to murder their grandmothers. While science is based on truth and the search for it, yet it is truth of the mind which must be servant to the heart and the soul of man.

The heart and the soul of man are in search of the truth too, I told them, but of a different sort, a sort not subject to proof by any known method of science, and this is the greater kind of truth, for which men must and do on occasion even go to war and kill or be killed, and risk everything but their integrity to serve. For without this integrity of heart and soul a man is worthless, and before there was any science to speak of there were still men like Socrates, the Prophets, or St. Paul, as fine as any people alive today.

I could, of course, have gone on indefinitely, but the lads at this point began to wilt, so I quit my polemic and turned abruptly to the lesson on taxonomy.

Oct. 10, Sunday, and a fine day, so I was off with eight boys on bicycles, with lunches and cokes, to hire three canoes at the South Bridge Boathouse for a paddle up Sudbury River to the island in Fairhaven Bay. The customary races took place, but as no finish lines were ever established it was uncertain who had won. It made me think of parts of *Alice in Wonderland.*

After eating, while four boys who were experienced paddlers and had received my permission tried to circumnavigate the island (which is an island only when the water is higher than it was that day) and while three lay dreamily on the shore, I took the remaining canoe and boy for his first paddle lesson. Our course was as tortuous as a whirligig beetle's, and this caused the tyro a deal of chagrin. How could anything so apparently simple as controlling a canoe actually be so difficult?

Oct. 17, Sunday. Today, as a week ago, except that we paddled down the Concord River, passing first the girls' school (assorted kinds of applause and derision) and then the Old North Bridge, where we disembarked for a look-see. The lads were most impressed by the grave of the British soldiers. Lunched further downstream. There the boys settled their meal by climbing a steep hill and slithering down it on the pine needles. Meanwhile, the same youngster who had had a paddle lesson last week took another, and showed some progress. Aside from that, I as usual avoided instruction except to answer questions.

On the way back we explored a newly plowed field and were fortunate in finding countless flakes and two arrow points, one of which could be rated a perfect specimen. This delayed us longer than planned, but by pushing paddles and pedals all were in good time for afternoon chapel.

Nov. 7, Sunday. Rather cold and raw, but not too much wind, so the River again, and downstream. Stops were frequent to let the boys warm up on foot. On one such occasion we explored Mr. H's pond, circling it. We were rewarded by seeing flocks of waterfowl, including Canada geese. These latter we were able to approach closely. I suspect they were some regular guests of Mr. H's, who feeds them liberally and offers them shelter. There was one snow goose which excited us all at the time, although later, on checking up, I determined that Mr. H. had bought one for a pet and kept its wings clipped.

On the way back we overtook two men in a canoe, inspecting their traps. They had made a surprising catch of muskrats and one coon. The bottom of the craft was littered with wet, very unattractive carcasses. Some of the boys were so shocked at this destruction of life that it was necessary to explain the similarity between plant crops on the one hand and wild animal crops on the other, each affording a surplus to help meet man's needs, but that enough must be spared to assure another surplus the next year; and how it is necessary to kill off many wild animals annually on account of the

shortage of natural predators, for which lack man is himself responsible.

Dec. 5, Sunday. The field trip season being over, I opened the laboratory for three hours for the sake of those boys who are curious enough about anything to want to do something about it. They come and go at will, and I help them all I can, which is little when there are several, each working on a different project. The only requirement is that each must clean up before starting a new line or on quitting the room.

They blow glass, clean or otherwise improve aquariums, peer through microscopes, fill balloons (when I can supply them) with gas, make soda-acid extinguishers, explore the possibilities of vacuum pump and bell jar, make Cartesian divers, toy with magnets, repeat demonstrations they have seen in class, dissect frogs. Just recall all the things small boys want to do, subtract the dangerous or the intricate, and you can see what these Sunday mornings are. Then, after the pond has frozen over, some are sure to borrow the ice chisel and pickerel tip-ups.

Often they are getting data for the weekly note assignment, particularly when the choice of subject is free. For the notes they write are divided, Part I and Part II, and Part I contains what the student has observed, without any help, and Part II what he learned further by reading or by consulting others. It is strange how at first the boys confuse first-hand information with second-hand, and how shy some are about taking credit for shrewd, original discoveries and comprehensive, hardwon knowledge.

Jan. 9, Sunday. Little J., who last year was too fastidious to touch a live frog, came and borrowed a cage trap, promising to tend it regularly, and to take entire responsibility.

Jan. 10, Monday. This afternoon, while I was making use of some free time to attend to personal affairs at my desk, J. arrived carrying the trap, which now contained some remnants of bait in the form of raw meat, and a lively brown weasel. We hurried over to the laboratory, dusted off an ample cage, and installed the captive. He had a plentiful supply of water, raw meat, and bedding, as well as a small wooden box with a door three inches square. In this he quickly made his nest.

Jan. 11, Tuesday. C., having seen the captive weasel, and a white one running wild over the coal pile, borrowed and reset the trap J. had returned yesterday.

Jan. 14, Friday. C. has caught, not the white weasel he expected, but a fascinating skunk. Since the trap is made of half-inch wire mesh, and is large enough for a skunk to move about in rather freely, it could not be approached to be opened for the animal's release. So I had to go back for my shot-gun. C. and I carried the soon dead victim and his prison on a long pole to the brook, where we rolled it into the water. In spite of the use of much care I was constrained to hang all my clothes on the line outdoors overnight.

Jan. 15, Saturday. Two adult members of our community having boasted about the very low temperatures on their porches, the Seventh Graders and I decided to turn our studies of weather instruments to practical use and investigate. We borrowed a Centigrade thermometer from the physics closet and tested it in melting ice and in live steam. Then we went about the campus and made records of the readings of some half-dozen thermometers and of the Centrigrade, too, at each station. On our return, the Centigrade readings were converted to Fahrenheit, and comparisons made. One of the vaunted thermometers was ten degrees too low; the other, seven. The boy who reported in a theme on the former condemned it neatly by commenting, "This one was the worst wrong of all." Incidentally, one thermometer that was in direct sunlight raised some valuable points about air temperature, and the discarding of unreliable data.

Feb. 5, Saturday. There being just the right amount of snow, I took the Biologists out during their laboratory period to look for animal tracks, and found much that was interesting. It is the best way I know of to discover how numerous wild animals are, and what they do. The rabbit dodging a fox, the squirrel almost caught by a large bird, the mouse hunting for seeds, the cat patrolling the stone wall, the fallen tree that serves as a bridge over the brook for many squirrels, the prints of pheasant and crow on the open field, all these and more.

March 2, Thursday. Today being warm, and spring recess not far off, J. and I turned out his weasel, Cedric, at the exact point where he had been taken. He was in excellent condition, and had become quite tame, so that at first he stayed and clambered over the top of his cage. Then he suddenly vanished in the matted brown grass, but not before he had posed for several pictures.

April 19, Wednesday. One of the older boys organized a party to paddle up the Sudbury to Wayland, where he lives, and back. A good way to spend the holiday. His father met us with a car, and drove us to the house for a piping hot lunch. We could not tarry, but set out soon after. The exact distance is unknown, but the round trip must be sixteen or eighteen miles. The weather was raw and windy, with squalls of rain. A rugged day, to say the least, but its difficulties and discomforts, overcome without complaint, gave each a sense of substantial achievement, and we all enjoyed it.

April 24, Monday. "Sir, may I see you a minute, privately?"

H's. request was readily granted as we stepped out of the study hall into a quiet corner of the corridor. He reached into a pocket and drew out a quartz arrowhead that I instantly recognized.

"I didn't take it, Sir."

The look on his face proved not only the honesty of his statement, but the struggle he had been through before taking me into his confidence and surrendering again his most prized discovery.

He had been on several arrowhead hunts and had always been unlucky. He had been with me the day before to the site known as Signal Hill, near Nine Acre Corner. From its small, flat crown you can look both ways along the Sudbury, and it is believed that the Nipmuks kept a watch there for traffic and signaled messages to nearby villages. Anyhow, there are a lot of fire-darkened stones, many flakes, and usually some arrowheads, fleshers, stone knives, bits of bone, and occasionally rarer items.

We were not having much luck. To show the boys how archaeologists work, I led them a quarter-mile across a low field to a "dig" where local members of the Massachusetts Archaeological Society were exploring an Indian village site. In the bottom of their trench H. found an unusually fine quartz arrowhead. His rejoicing was cruelly cut short by one of the archaeologists, who abruptly claimed the piece for the Society. It had been found in their trench. It was the best specimen of its kind yet taken. It was needed for their records and collections. H. was promised one just as perfect, though less significant, in exchange, one from a miscellaneous collection.

H. was close to tears as the glistening trophy was placed alongside the man's box of tools. I recognized, of course, that by the unwritten Code of the Boy a gross injustice had been done, but hoped to let him see how this act of sacrifice was necessary in the interests of science. Another boy, not for himself but for his friend, watching his opportunity as we turned to leave, had picked up the point, later returning it to H. With the latter I paid the obvious visit to the archaeologist, who had the substitute arrowhead ready with an official letter of thanks.

That "Sir, I didn't take it," and the second surrendering of the arrowhead were near the first milestone of H.'s transition from Boy to Man.

May 14, Sunday. Of all the canoe trips the one I like best in the year is taken when the spring bird migrations are heaviest. The party is hand picked. To qualify, the applicant must be no tenderfoot, but a self-disciplined outdoorsman, one who is unconsciously part of the environment, and as interested in what he sees as a squirrel at sun-up. No shouters, no racers, no splashers, no paper-strewers need ask to come.

On this particular mid-May Sunday the world was like a new store, just open for business, everything fresh, everybody expectant.

Our mission was successful. But who are you to whom I should disclose intimacies?

Perhaps you know mostly from classroom, library and laboratory, a lot about sound, inertia, the conservation of matter, heat and light, and many more such subjects. These are, by themselves, unlovely, practical, like eggs without shells. You would not understand anyhow. So let's skip it.

Or, perhaps, without such factual understanding, you know about the singing thrush, the plunging osprey, who eats whom, the nascent leaf. These are, by themselves, unpractical, lovely, like egg shells with the meat blown out. You not only understand the results of our trip, but imagine them without being told.

June 8, Thursday. Goodbyes all around. Ten thousand of them, at least. The school year is over.

Have I done what I tried to do?

Have my students learned something worth while about sound, and are they more aware of the song of the thrush?

Have they learned what inertia is, and watched the splash that ends the osprey's dive?

Have they learned the principle of the conservation of matter, and increased their curiosity about who eats whom?

Have they felt the warm spring sun, seen the new leaves, and understood how the first is necessary to the second, and what the leaves do?

I believe so; a little, at least; but I am not sure. Anyhow, next year I can try once again to make other boys see the simple beauty of the shell, know some practical facts about the meat, and sense with increased curiosity the eternal mystery of the warm, new-laid egg.

ELECTRONICS; A COURSE IN SECONDARY SCHOOLS

By Carl P. Swinnerton

Pomfret School

Editor's Note. Mr. Swinnerton spent a year lecturing on and demonstrating electron stream phenomena before going to The Shipley School. For the past year he worked at the Airborne Instruments Laboratory, Columbia University, Division of War Research. Other Science teachers working on the same project concur with Mr. Swinnerton in the statements presented in this article.

Among other things, the war has shown the importance of the field of electronics. There even are those who state quite boldly that electrons will win the war. However that may be, the need for men—and women—with a working knowledge of the subject has been an urgent one, and schools have introduced courses in radio as an obvious measure in meeting the emergency.

It is time, however, for looking beyond these first efforts to meet a wartime demand. We may well consider means of attacking the immediate problem more effectively, but we should especially direct our attention toward planning for the years of peace. Perhaps we will find a solution applicable to both cases if we develop a course in Electronics for the secondary school curriculum.

There should be little question about the necessity for such a course. After the armistice has been signed there will be radios aplenty, both FM and AM—yes, and PM, too. There will also be television, radar, new methods of sound recording and reproduction, a much more widespread use of hearing aids, further developments in fluorescent lighting, and increased use of photo-electric devices. If Electronics has not yet matured as a science, it has grown to such proportions that it can no longer be ignored. The electron is clamoring for recognition on a par with the atom, the molecule and the protoplasmic cell.

Until recently, there has been no such recognition in secondary schools. Teachers have tried to crowd a little more about "modern developments" into the Physics course—which is pretty well filled already—or into the activities of science or radio clubs. But such treatment has been by no means adequate, as the War Department has had occasion to inform us. On the basis of this information and of accompanying suggestions we have introduced courses in Fundamentals of Radio.

Such courses are a logical first step, but they are not inclusive enough, and they are too specialized. A course in Electronics would necessarily cover much of the same material, but it would treat the principles, equipment and methods as basic to a number of devices. A person who understands an amplifier circuit can build one into a radio set, but he also can use it in an electric-eye circuit, a public address system or a phonograph record player. Moreover, such a course would deal with photocells, photronic cells, cathode ray tubes and the like, which—though typical electronic tools—would probably be excluded from subject matter devoted to radio.

In other words, while teaching Fundamentals of Radio we are to a large extent teaching Fundamentals of Electronics. But we are omitting a number of topics that are fundamental in the broader field. If, then, we confine ourselves to "fundamentals" and do not digress too far into the specific problems of radio—or of any other special subject—we should have a course of general usefulness and appeal.

The word appeal is used advisedly. Electronics at the secondary school level may largely be a laboratory science. And much of the laboratory work can be—in a sense—at the creative level. The boy or girl who assembles a small radio, oscillator, or "burglar alarm" and finds that *it actually works* gets a thrill that other subjects cannot so readily supply.

There will, of course, be objection to introducing a new subject into an already crowded curriculum. To which there is the immediate reply that—in response to war conditions—the introduction of the radio course has already been accomplished. After a few relatively minor

modifications including a change in name, it will be ready for acceptance as one of the family.

Further adjustments must be made, to be sure, and possibly some people will feel uncomfortable during the process. But it is reasonably apparent that most of the discomfort will be confined to the Science Department as we shall see if we consider the facts.

In the first place, can we agree that Physics should be a prerequisite to Electronics? If the latter is to be taught effectively, the answer is almost unanimously Yes.

Should Chemistry be a prerequisite? Agreement here is not so general. But if we remember that the new subject is Electronics and not Modern Physics, which definitely requires a chemical background, the decision is more easily made. And there is another consideration. Physics is commonly taught as an eleventh grade subject; Chemistry as a twelfth grade subject. If Electronics is to be taught in the secondary school, the place for it is, therefore, in the twelfth grade. On that basis, we are forced to say No to Chemistry as a prerequisite.

We are, in fact, compelled to go even farther. Unless the present science program is completely reorganized, Electronics becomes a twelfth grade subject *in competition with Chemistry*. The situation is highly regrettable, but what else is to be done? It seems that the lives of youngsters in these days are affected as much by electrons as by atoms and molecules, and those individuals who are inclined to study the subatomic should be given the opportunity to do so.

The chemists, however, have no great occasion for alarm. Usually Chemistry is a more popular subject than Physics by a ratio of perhaps two to one. The number of students who, after a year of Physics, choose Electronics in their senior year will be a relatively small fraction of the present enrollment in Chemistry. The important point is that such a choice should be available.

Another objection to the new course is its cost, which—in a laboratory subject—is relatively high. Such cost, however, need not be excessive. Much of the equipment may be bought directly from the manufacturers at a substantial saving. Much of it should be assembled on bread-boards by the students themselves. (That is one of the constructive features of the course.) And many parts can actually be salvaged from old radio sets or similar sources of material.

Finally, we must give some attention to the matter of academic credit. We have assumed that Electronics, having established itself as a major science, should be taught in the secondary school for the same reasons that Physics, Chemistry and Biology are taught there. Postponement to the college level would make it unavailable to too many of those who would enjoy it and profit by it. When such a course is reasonably well established, there is little question about its being accepted by colleges or by other accrediting authorities.

The immediate problem, then, is one of establishment on a peacetime as well as on a wartime footing. And there are two available procedures which may be followed concurrently. Schools of high academic standing and prestige may prefer to develop the subject independently —according to the equipment, staff or educational methods peculiar to each—and individually arrange for the accrediting of their courses.

Many schools, however, would proceed more confidently if there were some accepted syllabus or set of standards already made up. And it is really urgent that some competent body decide just what the "fundamentals" of Electronics are. The Secondary Education Board can be of real service in sponsoring such proceedings. Whether the task is handled by the Standing Science Committee or by some special committee is relatively unimportant. The prime consideration is that something be done *soon*.

Science as usually taught to liberal arts students, emphasizes results rather than methods, and tries to teach techniques rather than to give insight into and understanding of the scientific habit of thought. What is needed, however, is not a dose of metaphysics but a truly humanistic teaching of science.

—H. D. GIDEONESE, 1938.

NEW MEMBERS

The Executive Committee announces the recent election to membership of the following schools:

Cranbrook School, Bloomfield Hills, Mich.
Ellis College, Newtown Square, Pa.
Far Hills Country Day School, Far Hills, N. J.
Harvard School for Boys, Chicago, Ill.
Longfellow School for Boys, Bethesda, Md.
The Progress School, Long Beach, California
St. James School, Washington Co., Md.
St. Mary's Hall, Burlington, N. J.
St. Peter's School, Peekskill, N. Y.
The Waring School, Santa Fe, New Mexico

TWO SCIENCE BOOK REVIEWS

SCIENCE AND EDUCATION

By S. R. Humby and E. J. F. James

Cambridge University Press, 143 pp., 1942

Science and Education, the fifteenth book in a series on Current Problems, is a compact, lucid discussion of the relations of education in science to society. The discussion took shape during "hours spent in home-guarding a water tower in the summer of 1940." Starting with the observation that science and invention have been causing profound changes in living conditions, particularly during the past third of a century, and that education has become unrelated to life, the authors demonstrate how wide the resulting gap is and suggest practical ways of closing it and keeping it closed.

The book should help any teacher, whether in science or in another field, to reassess his aims and to relate more clearly his teachings to life. It is a timely plea for scientific humanism and humanistic science. Not only aims are mentioned, but specific suggestions for attaining the aims are indicated. A quote: "One of the deepest problems of present-day education is the need for unification, for building some bridge across the gulf which separates literary and scientific studies. This is the point which Professor Whitehead stresses in a fine passage: 'No human being can attain to anything but a fragmentary training of his capacities. There are, however, three main roads along which we can proceed with good hope of advancing towards the best balance of intellect and character: these are the way of literary culture, the way of scientific culture, the way of technical culture. No one of these methods can be exclusively followed without grave loss of intellectual activity and character. But a mere mechanical mixture of the three curricula will produce bad results in the shape of scraps of information never interconnected or utilized. We have already noted as one of the strong points of the traditional literary culture that all its parts are co-ordinated. The problem of education is to retain the dominant emphasis, whether literary, scientific or technical, and without loss of co-ordination, to infuse into each way of education something of the other two.'"

—W. J. R. Taylor,
Middlesex School.

MEN OF SCIENCE IN AMERICA — THE ROLE OF SCIENCE IN THE GROWTH OF OUR COUNTRY

By Bernard Jaffe

Simon and Shuster. 600 pp.

This book was the Scientific Book Club selection for October, 1944. In all of Bernard Jaffe's books there is unmistakable evidence of careful and thorough search for material. The presentation of material is dynamic and remarkable for organization and clarity. *Crucibles* and *Outposts of Science* are outstanding books for the general reader in science. His textbook for elementary chemistry, *New World of Chemistry*, is one of the best.

Men of Science in America is a big job done with care and breadth of study. Jaffe might be characterized as a science teacher-at-large. Artfully he has interwoven interesting side-lights on men of science and the historical background in which they worked. In each of twenty chapters he has selected an outstanding American scientist as a peg upon which to gather the whole development of a field of science, and he gives credit due to a host of key men in that field. This book should be read with interest by both the science and history teacher.

In the foreword Professor George Sarton says: "The more science there is, the greater the need of toleration and kindliness, not to speak of justice, the greater the need of humanities without which science is not worth knowing and life is not worth living."

—H. Dayton Niehaus.

More and more, science has become not only increasingly necessary as a foundation for professional skill, but has come to be regarded as the most valuable instrument of culture. —Preserved Smith, 1930.

Felix potuit qui rerum cognoscere causas.—Virgil.

WHAT KIND OF TRAINED MEN DOES INDUSTRY NEED?

Excerpt from *Yale Alumni Magazine*
March, 1944

During the first months of 1944, the faculty of the School of Engineering of Yale University held a series of meetings with alumni of the Yale Engineering Association and representatives of engineering in industry to discuss the question: What kind of trained men does industry need?

The first five meetings in the series were devoted to the railroad, chemical and petroleum industries, air transportation and manufacturing, and electrical manufacturers. Meetings with representatives of the communications industry and of various smaller industries were held in February and continued in March. The meetings favored emphasis on training in fundamentals rather than the teaching of specific techniques or skills. It was also suggested that the basis of engineering education should be broadened to include adequate training in the use of English, and a knowledge of fundamental accounting, economics, and business law.

Dean Dudley made the following statement regarding the findings of the conferences. "That industry desires this breadth of training for its future employees is particularly encouraging to the faculty, since it accords with their long-established conviction that engineering education should be a broadening intellectual experience, in the course of which has been developed the ability to attack new problems and to use effectively knowledge, initiative and imagination."

Additional Note. Under the heading of "Education in Review" of *The New York Times*, Section 4, page 9, Sunday, October 15, 1944, Benjamin Fine gave a digest of a report on engineering education sponsored by the Society for the Promotion of Engineering Education. He said: "American engineering colleges are planning to add courses in the humanities and liberal arts fields, thus broadening the base and providing a more rounded education to the engineer of the post-war period, a survey of sixty leading institutions has disclosed. . . . The most significant recommendation was that calling upon the colleges to revise the engineering curriculum to include a minimum of 20 per cent in non-technical subjects."

INDEPENDENT SCHOOL SLANTS

Editor, Robert U. Jameson, Haverford School

As the war slowly and agonizingly, but surely, approaches an end, it behooves us, as teachers, to look about us and learn some of the things which we should know and should teach concerning the world in which we will have to make a peace. Last year, in the BULLETIN, I tried to indicate certain lines of investigation in international matters which seem to me to be of crucial importance. This year, in this column, I hope to be able to continue that investigation in two major ways: to act as a clearing-house of Independent School information on what teachers are actually doing; and to include pertinent short articles about what is going on in schools outside the United States.

As a start in this direction, two articles about education in England appear here. The first is a brief description of the Fleming report concerning the place of the Independent Schools of Britain—the "public" schools—in the post-war scheme which England is, realistically, working out before the end of the war. Since we have some of the same problems in the United States, the article is, it seems to me, especially interesting at this moment. The report is not so complete as one might wish, but it does indicate a new point of view—one which may or may not appeal to us here.

The second article, written by a student at King's School, Canterbury, is a vivid testimonial to the fact that in some ways at least, we do not know what war or manpower shortages mean. There is a lesson here for students in nearly all of the American boarding schools. This article is not of great social or educational significance here, but it is a slant that most of us know little about.

FLEMING REPORT

On June 26th, 1944, the Fleming Committee appointed by the British Board of Education issued a report which may have far-reaching effect on the status and character of the famous Public Schools of Britain. As is well known these schools are "public" in name only. They differ from ordinary private schools, however, in that they are non-profitmaking and are all members of the Governing Bodies Association and the Headmasters' Conference.

The Report points out that there are wider differences between individual Public Schools than are generally realized. Many, for instance are already partly dependent on government grants. Most are boarding schools, but some are day schools. Some are very ancient, but many were established during the last century. But although there is no uniformity amongst the Public Schools, there are certain common features in their internal administration and in the training they give their boys which have coalesced into a "Public School tradition." The Committee, after a scholarly and interesting survey of the history and characteristics of the schools came to the decision that their achievements and traditions were worth preserving and should be made available to all children capable of profiting thereby, regardless of their parents' income.

Two schemes for achieving this are suggested. The first, which would apply especially to day schools and schools already receiving government grants, entails the abolition of tuition fees or their gradation according to the parents' income. Local education authorities would be able to reserve places for pupils in their free primary schools. Pupils would not be selected by examinations, but according to their parents' wishes and their school records.

Schools under the second scheme would for the most part be the independent boarding schools. They would be required to offer a minimum 25% of their annual admissions to pupils from the free primary schools. Children selected would be paid for by the Board of Education or the local education authorities. There would be no competitive examinations, but regional boards would interview candidates for the Public Schools.

Entrance into the scheme would not be compulsory for the schools. But if carried out the Committee hope that what is valuable in the Public School tradition—self-discipline and self-reliance, readiness to accept responsibility, belief in the value of the humane studies and of the importance of religion in education—will become the heritage of every section of the community in schools which are, in every sense, public.

WARTIME DOMESTIC DIFFICULTIES IN PUBLIC SCHOOLS

By Peter Gurney[1]

At my school there are about 300 boys and during the last two years we have had hardly any domestic staff. So we have had to get around to things and organize the housework so as not to interfere with our school routine.

At first we used to think it would be an awful bore and we looked down on what we thought were jobs only for women. I've changed my ideas a good bit, and honestly, I like doing house jobs, at least, if they're decently organized. And I think we do organize them decently at our school.

About the meals first. We don't have to do any of the cooking at all, worse luck. I'd like to have fried things and mess about in the kitchen. I did once get a chance to help in the kitchen when there was some illness, but I only got dull jobs to do, like peeling potatoes.

We boys are responsible for laying the tables, serving the meals and washing up afterwards. We go on a serving week—about twice a term each, it works out too. There are thirty of us for the week, with prefects in charge. On the average there are two boys to each table. We come in about ten minutes before meal time and lay the places. Then when the boys file in, we give out the food to each table. The hall prefects for the week, stand behind a huge hotplate and serve the food. The washing-up afterwards is organized from the labor pool, as I'll tell you later.

At the beginning of term a Labor Committee is arranged among the prefects. It consists of one person from each house. He calls his house together and asks you what work you want to do for the term. Usually, you manage to be-

[1] Peter Gurney is a student at King's School, Canterbury, England.

long to whatever labor squad you want to. You may think it's odd, but the washing-up squad is one of the most popular, especially among the juniors. I suppose because it's quickly over and there's always the chance of an odd perk or two from Cook.

In this house labor pool, the sort of things you can belong to, are Plumbers, Paths and Drains, Cleaners, Gardeners (the biggest job of the lot), Salvage, Labs, and so on. Once you have got your squad settled you stay in that form of labor for the whole term.

Practically all labor is done in the afternoons. It works out at about two afternoons a week for each house. If your house is on "labor" you don't play games that day, though if you're keen there's plenty of spare time. It leaves about four days a week for exercise, not counting Sundays, which are free of labor as far as possible. Of course, one exercise day is taken up with A. T. C. or J. T. C. Supposing it's your afternoon for labor, then you go off to whatever your squad is, and get on with the jobs you have to do. Perhaps, you're a member of the bed mending squad. Then you'll see what beds have been reported as broken and mend them. Or you might be on "Paths and Drains" and you have to go and see there are no stopped drains, or you get cinders and sift them and put them on any paths that need them. If you're a cleaner you have a certain form room to sweep and dust and you collect up all the paper and leave it for the salvage squad.

By having all the jobs shared out like this, we managed to keep our school clean and repaired.

There are a lot of other jobs which I've not mentioned. For instance, we all make our own beds and we used to help stoke the boilers, but we've managed to get two men to do that and fetch the coals and so on. Then there's fire-watching. Two people are on every night, though you can sleep unless the warning goes. Everybody takes a turn at this, from masters to juniors. On Sundays, there's always the Home Guard after morning Chapel for those who belong.

Now that my school days are practically over, I don't look back on the chores we have to do with regret. On the contrary, when I go home on holidays I don't feel so useless in our own house as I did in the days before the war, when I didn't really know whether you had to wash a saucepan or dry-clean it.

INCREASED SALARIES FOR TEACHERS

(Address by Frank S. Somerby, President of the Association of Private School Teachers of New York City and Vicinity, at the Spring conference held at the Spence School on April 13th, 1944.)

One aspect of the problem to be discussed this evening was highlighted by a story you must have read in the papers this week. A teacher in a Texas high school was called on the phone and asked if she could recommend a student for a position in an office downtown. Inquiring about the details of the job she was told that the salary would be up to $40 a week and no experience necessary. So, the teacher took the job.

Over 250,000 teachers have left the service since Pearl Harbor. Teachers Colleges' enrollments are only forty per cent of pre-war levels.

The average earnings of teachers today are far below that of public health nurses or factory workers, only half that of veterinarians, one-third of lawyers. The pay of the average factory worker is at least 80% above that of 1939. Even the farmer's income is now over three times the pre-war figure. A delivery boy from your neighborhood grocery makes $25 a week; in some stores $35. Why, that is more than some of our kindergarten teachers are paid! Most teachers in private schools are getting the same salary now as during the peak of the depression. Our colleagues in the public schools of this city have been running large advertisements in the newspapers calling attention to the fact that the governor raised the salaries of state employees, the mayor of city employees, but no adjustment has been made of teachers' salaries to meet the increased living costs, so that competent teachers are leaving the profession and some are forced to borrow money to make both ends meet. Yet the average salaries of these public school instructors are far in excess of what many of our private schools pay. Here is the scale for the New York City system. Kindergarten through sixth grade, from $1,608 to $3,340; the Junior High School, $2,040 to $3,830; Senior High School, $2,148 to $4,500. But this doesn't give a true picture, for if one

gets $3,830 in Grade seven or Grade eight, the city sets aside from 5½% to 7% of this amount against the day when he retires from active service, at which time he will begin to draw as a pension half of his salary for life, or, if he chooses, he can draw a stipulated amount each month until death, when his wife or estate will continue to receive payments.

Now, we all chose to teach in private schools. We didn't enter this field with our eyes closed. Yet we all realize how heavily many of us are penalized by doing so. We do have selected groups of children, although comparable classes are found in many public schools. But most of us have no tenure of office, no security, no fixed increments of salary increase for length of service, and no pensions. Old age and declining health are real nightmares to private-school teachers.

Society demands of a teacher certain cultural standards. But one can't afford the opera, not to mention "Oklahoma," nor buy the ATLANTIC MONTHLY on the salary he or she receives. You know the price of commodities today. A simple buckram shape with a few gewgaws is a lady's hat, costing from $8.75 up. A man's overcoat, once $30 to $35, is now $65 to $80. A child's spring coat, $5.95 before the war, is $16.50 today. Our BULLETINS, issued by the Association, costing $50 last year, are now $90, with fewer pages.

An apartment house pays a high school boy $1.50 to relieve the elevator man for one hour. A plumber, when he works on a holiday gets $4.00 an hour, the maximum our most highly trained teachers can charge for tutoring.

Last summer many of us worked during our vacation. We thought it our duty to help the war effort. Now we find it's to help ourselves, to pay the increased cost of living, and for a married man or woman with a family, it means working the year round to keep the wolf from the door. It's true also that teachers are now working longer hours per day than heretofore and harder. There are more demands upon our time. We welcome this as our small contribution to wartime needs, but the tremendous crowds in our stores today with their frantic rush to pay almost any price for consumer's goods are *not* school teachers. They are defense workers or others who share in the swollen profits. We realize that increased wages result in an increased cost of living and inflation. That is why our government advocated for a time the so-called Little Steel Formula, no longer in force. But do you recall what that Little Steel Formula meant? An increase of 15% over the January, 1941 level. My word! Teachers wouldn't dare hope for such a fantastic Santa Claus as the adoption of that standard to ameliorate their present condition. The *average* income of all citizens during the first seven months of 1943, however, was 65% higher than in the same period of the boom year of 1929. Was yours?

Due to the increased cost of living and augmented taxation we find ourselves today struggling to get along on *real* wages, measured in terms of buying power, far below that of ten years ago. Our income taxes are 600%, 1000% or more of what they were a few years back. Needless to say some adjustment is absolutely necessary for most teachers, either in the form of increased salaries or cost-of-living bonuses. The problem, then, is how to secure it with the full and sympathetic cooperation of heads of schools and trustees.

Is it not true that in some schools the teachers are indirectly subsidizing many of the parents and even the school itself? A few years back, in order to lighten the load of some of our patrons, hard hit by the depression, the extra charges for text books, stationery, doctor's and athletic fees were absorbed by the school, thus virtually decreasing the tuition. Cuts in tuition, or partial scholarships, have often been given to parents, who do not hesitate to plead their own cases. In many instances it is questionable whether these reductions were justified.

Consideration has been granted, sometimes unwisely, to this group. Cannot equal consideration be given now to faculties? I do not believe our enrollments would suffer, for today they are higher than ever before and in many schools the income is larger. People always find the means to buy what they most desire. If they think private-school education indispensable for their children, they will find a way to meet the bills. Perhaps it is high time some of the extra costs were paid by the parents or tuition rates increased to meet present-day needs.

The heads of our schools were formerly teachers and they understand the teacher's viewpoint. We realize they are responsible to parents and to boards of trustees. But we are confident of their sympathetic reception to our needs and to the opinions we express tonight.

The unifying discipline of modern education lies in modern science, which is simply the distilled essence of the classics of all time. —GEORGE A. LUNDBERG.

BOOK REVIEWS

OUR INDEPENDENT SCHOOLS

The Private School in American Education
By Ernest Barrett Chamberlain
American Book Co., 1944, 212 pp.

If Voltaire were available to review Mr. Chamberlain's *Our Independent Schools*, he might write, "I agree with everything you say, but will defend to the death my right to wish that it were more forcefully and colorfully said."

Here we find discussions of what is demanded today of educators and of the programs by which they hope to meet the demands; of the historic roles of the independent school; of testimonials to the work of independent schools; of the salient characteristics of independent schools; of the present problems faced by these schools; of present and future necessary adaptations; and at length there is presented a summary of the case. This case, it is superfluous to point out to readers of the BULLETIN, is a good one; and Mr. Chamberlain neglects no known aspects of it. He has achieved a sound and complete justification of the independent school. To discuss all the topics he outlines or mentions and to compose a melodious fugue from the themes which he sounds, one would have to write another book. I shall therefore extract a few topics, stretch them, and perhaps harp upon them.

The account of the origins and history of the independent school is sound and informative. The author's remarks on "Character Development" and "Complete Environment Controlled" (p. 66) are well put: "The (independent) schools have stood firmly for ethical standards and have kept idealism alive in the face of materialism and doubt"; "They believe that the best results can be secured when a student's whole life is planned and every influence and activity of his day is directed toward his growth." Another vital point is raised (p. 80) in the remark that some public assistance to private education might be available without concomitant public control. The section on "Religious Life and Training" (pp. 114 ff.) touches, in the reviewer's opinion, a nerve-center of any educational organism.

There are sections which stand out. "Training for Leadership" (pp. 123 ff.), contains such sayings as "One must have a healthy respect for authority before he is fit to discharge it." Again, leadership training, regardless of cost, should go to students who can use it, and the author draws from this premise good conclusions about endowments. . . . All of the discussions of public relations are excellent—to this reader they seem the best part of the book. Mr. Chamberlain points out that the independent schools must *interpret themselves* to the public; he gives an effective statement of and an effective refutation of current misconceptions about "private schools." As he well says to those who quack of snobbishness, "It would be hard to find democracy practiced on a higher plane" (than it is in such schools).

In this reviewer's opinion, however, the sound skeleton of the book is not covered by warm and living flesh, to say nothing of being effectively clothed. One may further ask for what audience it was intended. Certainly it will not bring front-line teachers any new dispatches, nor snatch them from the reddest hell of the fight and fling them into the immortal, incommunicable dream. Parents, donors, tycoons, and prospective benefactors will not be aroused by it to the point of calling for a checkbook and a fountain pen. It is completely eclectic; it is over-outlined; and at times its prognosis is a thesis-like catalepsy. Style and approach are jejune, and too many of the woodnotes and trumpet-blasts are mere quotations—heard as it were, on a victrola. The book has not enough hair on its chest to menace the financial resources of foundations—it is not big enough or tough enough. It would make a first-rate textbook for a State Teacher's College course on *The Independent School*—except that such a course might not be considered even theoretically valuable by either educationeers or journeymen neophytes. Many familiar phrases are here, however: felt needs and trends, challenging conditions, a changing world, and, of course, what of the future?

Too many prospecti are quoted, too many authorities summoned; there is too little of the verbal vitality and philosophic depth of, for instance, Frank Ashburn's *Primer for Parents*.

One can read into Mr. Chamberlain's book a criticism of the pragmatic, instrumentalist philosophy which vitiates the spiritual atmosphere of American public schools, and which in some aspects amounts to little more than a philo-

sophical justification of William James's "bitch-goddess, Success." One can gather that independent schools, as a group, try to teach their pupils that happiness is a by-product of Christian faith, selfless, dependable devotion to duty, and the quest for wisdom. One can infer that the best type of independent-school leader could build a great school with a heated barn, an adequate supply of books, and a handful of really top-flight *people* as teachers. It is stated that most (shall we say 70%?) of the work of a good independent school is done outside of the classroom. These things are not, however, phrased in gold, heightened by humor and hyperbole, or dramatized so as to rock the sensibilities of those beyond the footlights of the independent-school world.

At this point one of my colleagues may rise and remark, "Si tacuisses, philosophus remansisses," with a reference to the ironical niceties of the Latin subjunctive. The foregoing strictures are inspired by this reviewer's burning faith in the independent school and all that it stands for, and by a desire to find enlightenment for those who in this matter remain in outer darkness (and some not without wailing and gnashing of teeth).

Administrators *within* our schools would do well, however, to ponder Mr. Chamberlain's remarks about "Co-operative Interpretation." At very little financial cost to its member schools, the Secondary Education Board could engineer a program of public enlightenment which would achieve results far out of proportion to anything obtainable by any individual school, however wealthy, successful, or famous. Why would not "Co-operative Interpretation" be a good theme for the next Annual Conference?

—Harrison L. Reinke, *Headmaster*,
Fay School, Southboro, Mass.

TERTIARY EDUCATION

By George Dinsmore Stoddard

President of the University of the State of New York and Commissioner of Education

The Inglis Lecture, given in 1944 for the Harvard Graduate School of Education; published by the Harvard University Press, Cambridge, Mass.

With educational sequences in such a state of flux, this study should be of deep interest to all readers of this magazine. "Tertiary education (that which follows secondary)," says Mr. Stoddard, "is of two types, terminal and senior college preparatory." He then presents the following chronological scheme of education as it now exists with subsequent suggestions and considerations.

Approximate Age of Entrance	Designation of Grade	Level of Education	Institution
3, 4, 5	C, B, A	Early childhood	Nursery school and Kindergarten
6, 7, 8 9, 10, 11	1, 2, 3 4, 5, 6	Primary	Elementary School
12, 13, 14	7, 8, 9	Secondary	Junior High School
15, 16, 17	10, 11, 12	Secondary	Senior High School
18, 19	13, 14	Tertiary	Institute; Junior College; Junior division of college
20, 21	15, 16	Higher	College; University
22, —	———	Graduate or Professional	University

Throughout the lecture loopholes for variations are provided, but thoughts worthy of consideration are neatly inserted concerning a year of national service and the necessity of including in such a year, if needed, clinical guidance, work experience, recreation, and general education; concerning an additional year at the tertiary level beyond this year for those who wish to go on; concerning pre-medical study at the Higher level (ages 20, 21), alternate with continued courses of traditional A.B. variety, yet including a modicum of the same, and alternate also with other beginnings in special cases for lengthier studies; and finally attainment of the graduate level.

Terminal points might be at the completion of the eighteenth year, at the completion of the "Tertiary" level, at the completion of the "Higher" level, or at the completion of the "Graduate" or "Professional" level.

Mr. Stoddard gives careful thought to the ultimate needs of both the individual and society, in addition to showing the step by step transitional problems.

—J. B. Sturges,
Milton Academy, Milton, Mass.

CONFERENCE FOR TEACHERS ON THE SOVIET UNION

Under the sponsorship of the schools and colleges division of the Philadelphia Council of American-Soviet Friendship, a two-day conference for teachers, students, and parents was held at the Benjamin Franklin Hotel in Philadelphia on October 6 and 7, with the general aim of providing all three of these groups with information about Russia. The conference was probably the first of its kind to be held in the United States, and it aroused widespread interest in the public and independent schools of the area.

Among the distinguished speakers who participated in the conference were Dr. Arthur Upham Pope, well-known writer and authority on Russian affairs; Dr. Corliss Lamont, chairman of the National Council of American-Soviet Friendship and, last summer, co-director of the workshop on the Soviet Union at the Harvard Graduate School of Education; Captain Orest Shevtsov, Red Army hero and head of the Anti-Fascist section of the Soviet Youth groups; Miss Thelma Nurenberg, author and correspondent; Dr. Treadwell Smith, and several others.

Panel Discussion Topics

Four panel discussion groups which drew large groups of listeners and questioners considered these topics: The land and its people, Soviet youth, Social legislation, and Culture in the Soviet Union. Dr. Pope's address described Russia as it is today, partly by dispelling twenty or so common misconceptions about that country which pass as truth among Americans. Dr. Lamont, in discussing the place of Russia in the post-war world, also denounced the great amount of false thinking about Russia in this country and presented his considered opinion that Russia's peace aims will coincide with ours if we will take the trouble to understand them.

Several exhibits of teaching materials, books, posters added greatly to the value of the conference. For the benefit of BULLETIN readers who may be introducing some study of Russia in social studies or English courses this year, a brief list of what seem to be the most helpful of these materials is printed at the end of this article.

It was obvious from the enthusiasm about the subject which was displayed by the nearly three hundred people who attended the conference, that the need for accurate information and carefully prepared material about the Soviet Union is acute. Many schools, public and independent, are teaching about Russia this year because they realize that lack of information about the greatest of our Allies is tragic and short-sighted. It is to be hoped that other cities will follow Philadelphia's lead in arranging such meetings, which will do much to direct the thinking of teachers in all schools.

Teaching Materials

Inexpensive materials for teachers and students concerning the study of the Soviet Union include the following:

1. *Meet the Soviet Russians:* A study guide to the Soviet Union for teachers in secondary schools. Harvard Workshop Series: No. 6. Graduate School of Education, Cambridge, Mass. 75 cents. (Just published.)
2. *The Soviet Union Today:* An outline study. The American Russian Institute, 56 West 45th Street, New York 19, N. Y., 1943. $1.00.
3. Stembridge, J. H. — *An Atlas of the U. S. S. R.* Oxford, 1942. 10c.
4. Bibliographies, exhibits, posters, pictures, and other materials are available—free or inexpensive or on loan—from Russian War Relief, Inc., 11 East 53th Street, New York 16, and from the National Council of American-Soviet Friendship, 232 Madison Avenue, New York 16.

Note: The first item on this list is something that has been needed for a long time. It is an objective study plan and outline textbook, with reading lists and competent additional teaching material, covering the geography, peoples, history, present-day life, and foreign relations of the Soviet Union. It should be of immense help to teachers who have been struggling to make a syllabus of their own for a course on Russia.

—ROBERT U. JAMESON.

INDEPENDENT SCHOOL ASSOCIATION OF BOSTON

PROGRAM OF FIRST MEETING

Saturday, November 18, 1944
The Winsor School, Boston

10.00 A.M. Discussion Groups
"Effective Education in a Transition Period"

English
What Are You Doing About Vocabulary?

French
A Workable French Program Today

Mathematics
Interchange of Interesting Mathematical Teaching Experiences

Science
The Teaching of Theories in the Science Classes

Social Studies
How to Relate Theory to Action?

11.00 A.M. General Session
Subject: The Responsibility of the Educated
Bruce Bliven, *Editor of The New Republic*

WHAT THE SCHOOLS ARE DOING

News of Boys' and Coeducational Schools

Editor, Charles R. Morris, Milton Academy

A School Writes

"(The headmaster) feels that it is particularly important that we contribute regularly to The Independent School Bulletin."

Schools are becoming increasingly conscientious in keeping the editors of The Independent School Bulletin informed of significant news items of general interest. This editor's work is made much easier when a steady flow of news items, letters, press releases, alumni magazines, and student publications, are channeled in his general direction. Since he has a teaching job to fill and, often, other duties as well, he is happiest when the material comes to him in the most easily usable form. It takes time and work to sift a quantity of material. If You Have Neglected to Send Material to The Secondary Education Board for use in The Independent School Bulletin there is still time to reform. Resolve, this year, To Keep Us Informed!

The following publications come to us regularly. We thank the schools for sending them to us.

Andover, *Phillips Bulletin;* Asheville, *Alumni Bulletin;* Baldwin, *Family Letter;* Belmont Hill School, *The Sextant;* Berkshire School, *The Green and Gray;* Blair Academy, *The Blair Breeze;* Carteret School, *The Carteret Digest;* Choate, *Alumni Bulletin, News;* Deerfield Academy, *The Scroll;* Episcopal Academy, *The Scholium;* Exeter, *Phillips Exeter Bulletin;* Fay School, *Alumni Bulletin;* Fessenden School, *The Albemarle, Alumni News;* Fountain Valley School, *FVS News-Magazine;* Friends' Central School, *Friends' Central News;* George School, *George School News, The Georgian;* Germantown Friends School, *Monthly Bulletin of Parents Auxiliary;* Gilman Country Day, *Alumni Bulletin;* Governor Dummer, *The Archon;* Groton, *Alumni Quarterly;* Gunnery, *News;* Hackley, *From Now On;* Haverford, *Alumni News;* Hill, *News* and *Bulletin;* Hotchkiss, *Record;* Indian Mountain, *The Scop;* Kent, *News;* Lawrenceville, *Lawrentian;* McDonogh, *The Week;* Mercersburg, *News, Alumni Quarterly;* Middlesex, *Anvil, Alumni Letter;* Milton, *Orange and Blue, Alumni Bulletin;* Moses Brown, *Bulletin;* Mount Hermon, *Hermonite, Alumni News;* Noble and Greenough, *Alumni Bulletin;* Pebble Hill School, *The Rolling Stone;* Peddie, *News* and *Chronicle;* Pomfret, *Pontefract;* Portsmouth Priory, *Bulletin;* Rectory, *News;* St. Albans, *News;* Santa Barbara, *El Batidor;* St. Louis Country Day, *News;* St. Paul's, *Alumni Horae;* Salisbury, *Bulletin;* Shady Side, *News;* South Kent, *News;* Stony Brook, *Report;* Taft, *Alumni Bulletin;* Texas Country Day School, *Round Table;* Thacher, *September Circular;* University School (Cleveland), *Observer, Alumni News-Letter;* Western Reserve, *Record;* Westminster, *Alumni Bulletin;* William Penn Charter, *Penn Charter Magazine;* Williston, *Alumni Bulletin.*

Lake Forest Academy Faculty Begins Seminar Course

On Tuesday evening, October 3, the Faculty of Lake Forest Academy attended the first meeting of a seminar course in education which has been arranged with the University of Illinois as an extension of the School of Education.

The course is being conducted by Dr. B. Othanel Smith, Associate Professor of Education, will meet once a week, and carries one unit of graduate credit.

Last year the Faculty devoted much time to a curriculum study and made a preliminary report, which was published last summer. This course is designed to stimulate Faculty and departmental thinking in further study of the curriculum. The course, to be officially known as Trends and Techniques in Curriculum Making, will be specially adapted to the needs and interests of the LFA group. In a preliminary statement of the course, Prof. Smith says:

"In general the purposes of the course, arrived at in consultation with members of the Lake Forest Academy Faculty, are: (1) to examine the democratic tradition in America with a view to setting forth the ideals of American culture as guides to educational thought and practice; (2) to assess the present curriculum of the secondary school from the standpoint of these ideals; and (3) to outline changes in the curriculum which will more fully realize these aspirations for the people as a whole. This means that the emphasis in the course will be upon the problem of determining the kind of social-moral content and the kind of intellectual discipline which a curriculum for democratic behavior and control must have."

In addition to the Faculty Group, Mr. McPherson Holt, Chairman of the Educational Committee on the Board of Trustees, Mr. Raymond Moore, Principal of the Lake Forest High School, and Mr. Frederick F. Quinlan, Superintendent of Schools in Lake Forest, have been invited to participate in the course. From time to time other educators and representative citizens in Chicago and vicinity will be invited to participate.

Four Faculty members—Dr. John W. Shank, Dr. Robert S. Hartman, Mr. Clarence Appleby, and Mr. Richard Delano—have been asked to serve as a steering committee. They will meet briefly each week with Prof. Smith to criticize and guide the direction and content of the course.

Mr. Bowditch, in commenting on the course, is most enthusiastic about the possibilities of the program. In a statement, he said:

"Lake Forest Academy is extremely proud of its record and realizes its responsibility in the American educational scene as an independent school. Throughout the history of education in America, the independent schools have taken the lead in educational content and method. But in recent years, as the public high school systems in the country have grown and expanded, independent schools have become complacent, have been slow to assume the responsibilities of active cooperation with public institutions for the benefit of education.

"Once more we are awaking to our responsibilities. The National Council of Independent Schools, recently formed, has been very active on a national scale. The Private Schools Association of the Central States has been increasingly conscious of its responsibilities and has done much to make closer contact with officials of public education. Through this course, it is my hope that our Faculty will be stimulated professionally; that departments will be motivated and guided in their deliberations; that closer relationships with the University of Illinois, the state university of our state, may be established; that the problems of education in Lake Forest, both public and private, may be better correlated and solved; that there may come from this small beginning a significant study of secondary education by educators and citizens of the Middle West."

An Experiment in Teaching Race Relations in a Private School

George School, a boarding school conducted by the Philadelphia Yearly Meeting of Friends for the children of Quakers and others, at George School, P. O., Bucks County (Pa.), has turned over its classes in United States history to Alphonse Heningburg of the National Urban League for a series of three lessons on "The Negro in American History." Dr. Heningburg, educated at Tuskegee Institute, New York University, and abroad, has taught at both Tuskegee and the North Carolina State College for Negroes. His course at George School has emphasized the fact that war conditions have called the Negro into skilled trades in industry, as the last war opened unskilled jobs. If these economic gains increase interracial tension, the good will of both races will be needed to solve the problems created. He raised the question whether America can take its rightful place in the world of nations until we shall have arrived at more democratic practices in our country.

The purpose of these classes, according to George A. Walton, principal, is to make children of Quakers more familiar with important factors in American life which their childhood environment may not have emphasized. It is a follow-up to a series of lessons a year ago on China given by T. Y. Fong, headmaster of Chousan High School in China, a coeducational boarding school under Baptist auspices, now temporarily closed.

Dr. Heningburg entered largely into the community life of the neighboring town, Newtown (Pa.), visiting many colored families and occupying the pulpit at a joint session of the A. M. E. and Macedonia Baptist churches. He also attended the Young Friends Forum and occupied the pulpit at the Methodist Church.

—Reprinted from *School and Society*, May 27, 1944.

Forum on Racial Tolerance

The Phillips Exeter Academy is conducting a forum on racial toleration this fall. The first speaker will be Dr. Clyde K. M. Kluckhohn, associate professor of anthropology at Harvard University. His subject on Sunday, October 1, is "The Myth of Race." He will be followed on Sunday, October 22, by Mr. Morris L. Ernst of New York City, whose subject is "Racial Prejudices that Divide the World." The final speaker on the forum, on Sunday, November 5, will be Dean William H. Hastie of the Howard University Law School, Washington, D C., whose subject will be "Acute Racial Issues in Post-War America."

There will be three other lectures at the Academy during the fall term. On Sunday, October 15, W. W. Chaplin, war correspondent and radio news commentator on NBC, who has recently returned from the European theatre, will speak. His subject will be "I Saw the Invasion of Normandy." On Sunday, November 12, Dr. Morris Fishbein, editor of the *American Medical Association Journal* and well-known lecturer, will speak on "Doctors at War." The last speaker of the term, on Sunday, December 10, will be Princess Paul Sapieha, whose subject is "Books as a Bridge Between Two Worlds." Princess Sapieha is the author of *Beyond This Shore* and *Polish Profile*.

Friends' Central School Centennial Year

This year the Friends' Central School, situated at 68th and City Line, Overbrook, Philadelphia, Penna., plans to celebrate its one-hundredth birthday. Alumni and friends began to prepare for this centennial celebration in 1936, when a centenary fund was established to be completed in 1945. It is a comprehensive program for the future life of the school and its first objective, the purchase of three acres of land, has been won.

Friends' Central School was founded on the first of September, 1845, by Benjamin Hallowell, the first principal of the Boys' Department, and Mary H. Middleton, the principal of the Girls' Department. It was housed in a new school building located in the lot adjoining the property of the Monthly Meeting of Philadelphia on Cherry Street between 4th and 5th Streets, where now is found the entrance to the Delaware River Bridge. In 1857, when the residential area had moved westward, a new school building was erected on Race Street at 15th Street. It, too, adjoined the new Meeting House where the Yearly Meeting of Friends was held. The move to Overbrook in 1925 was undertaken to keep the school in a residential district on City Line Avenue at 68th Street. The advance in transportation facilities indicates that Friends' Central is now permanently located.

In connection with the centenary celebration, Dr. Robert Hutchins, President of the Chicago University, will be the guest speaker at a meeting to be held at the school on Wednesday evening, November 1st.

Derby Academy: Upper School

The first Morning Chapel was led by Harrison M. Davis, Jr., Headmaster, as Derby Academy began its 160th year as the oldest coeducational school in America. The school service flag has a blue star representing 101 former students; a gold one for three. One of the first activities to get underway this year is the annual Junior Red Cross membership drive. Student monitors are making the collections. The school has a high record in community wartime service. In 1942 over 25,000 pounds of scrap metal was collected by the students and faculty. Last year 10,000 pounds of paper was salvaged in ten weeks. This program is being continued. The students also do their own rooms, wait on table, assist in the kitchen, as they have in past years.

Strong emphasis is being placed on departmental correlation this year, particularly between English and History, Art, Music, and Science. Revived after a long lapse is the Student Bank and Store, with each student using a school checkbook for all school purchases.

Marden Hall, acquired last November by the Trustees, opened for its second year as the school dormitory. The Housemother, Mrs. Marjorie Worth, spent the summer as secretary at Little Wohelo, Luther Gulick Camps, in Maine.

New England Association of Chemistry Teachers

The N. E. A. C. T. held its 227th meeting at The Phillips Exeter Academy, Exeter, New Hampshire, October 21, 1944. Mr. John C. Hogg, chairman of the Academy Science Department, was in charge of all arrangements. Mr. Millard W. Bosworth of Vermont Academy, Saxton's River, Vermont, president of the Association, presided.

The program opened at 10:15 a.m. on the 21st with a talk by Mr. James W. Elton, M.S., of Exeter, New Hampshire, "Apple Growing in New England." At 11:00 a.m., Dr. Edward R. Atkinson of the University of New Hampshire lectured on "Experiences in Chemistry Instruction in the Army Specialized Training Program." At 11:45 a.m., there were demonstrations by Dr. Charles L. Bickel and Mr. Judson B. Cross of the Academy Science Department.

Luncheon at The Exeter Inn was followed by a business meeting at 1:45 a.m.

At 2:00 p.m., Dr. Daniel S. Eppelsheimer of the University of New Hampshire lectured on the topic "Industrial Engineering Problems in New Hampshire." At 2:45 p.m., Dr. Elbert P. Little of the Academy Science Department lectured on "Technical Services of the Marine Biological Laboratory, Wood's Hole." At 3:15 p.m., there were demonstrations by Mr. Richard L. Dunnell and Mr. Donald H. Miller of the Academy Science Department.

Forty Chemistry teachers attended.

Excerpt from a Report on the Phillips Academy Hour (WLAW, Lawrence, Mass.)

Six months on the air has taught us much. We have begun to discover the types of programs best fitted to production over the air. We have learned that most of our listening audience prefers to hear programs, especially plays, in which students take part. Plans are now under way to increase student participation on the 1944–45 series of broadcasts. And we have come more and more to realize the pedagogical value to our students of a weekly half hour on the air. The chance to participate on a round-table discussion has proved a strong motivating force in improving oral delivery, clarity of expression, and argumentative acumen. There are additional benefits to be derived from the clear thinking and rather wide research which a boy must do in preparing himself for a round-table discussion. Radio plays, by the use of

script, take a comparatively short time to produce. More frequent radio presentation of plays and consequently a greater student participation in them is therefore possible than with stage plays.

—Quoted from *The Phillips Bulletin*, Summer.

An Instance of Collaboration

Early in the winter of 1943–44, a boy who had attended the Peddie School for more than three years was forced, through circumstances beyond his control, to return to his home near Philadelphia. Arrangements were made, after consultation with his father and his Headmaster, to accept him as a regular member of the Senior Class at Penn Charter, where he continued with the courses already begun at Peddie. At the end of the school year, he was certified by the Faculty at Penn Charter as having successfully completed these courses. The Faculty at Peddie thereupon accepted these courses for credit and granted him his Peddie diploma. This happy instance of co-operation was of great help to the student and is a source of no little satisfaction and pleasure to the staffs of both schools.

March of Time Announces New School Series

A new edition of *The March of Time* specially edited for use in schools and colleges has been announced by Producer Richard de Rochemont. Known as the Forum Edition, these special adaptations—in 16 mm.—of the regular *March of Time* will run twelve to fifteen minutes. Starting date for the series was October 1, 1944.

An ever-increasing demand from educational groups throughout the country prompted *The March of Time* to initiate this new edition. In a recent survey, educators voted overwhelmingly for distribution on a rental basis. Because the basis of the plan will be rental only, and because of direct distribution from its own offices, MOT will be able to keep the Forum issues up to date by re-editing in the light of changing world conditions.

March of Time offers two plans—a subscription and an individual rental. The series of eight films may be rented at a subscription price of $20.00, or individual films may be rented from the list at an individual rental of $3.00 each. It is hoped to make available to Charter Subscribers during the coming year a group of four films produced exclusively for educational showings.

To make up the Forum Editon, the editors of *The March of Time*, in collaboration with the editors of *Time*, *Life* and *Fortune* magazines, will choose from the thirteen yearly issues of *The March of Time* the eight films which offer the most outstanding educational material. They will re-edit each of these films—write a new commentary to point up the social and economic significance of the subject—cut out "spot" news sequences and add new sequences with maps and charts to make each film particularly useful for study and discussion. The subjects selected for the 1944–45 series are: Brazil, Portugal, Texas, Canada, India, Airways of the Future, New England, South Africa.

A Discussion Outline has been prepared by the editors. This Outline will contain not only suggested study questions, but bibliography of the subject, and will be sent to subscribers of the *March of Time* Forum Edition two weeks in advance of their play date.

A New Trans-Orbal Map

We have recently received from the Global Press, Inc. of 381 Fourth Ave., New York City, a copy of their new "Trans-Orbal Map," price one dollar. This global projection of the world, though an excellent example of modern lithography, shows, from the cartographic standpoint, all the difficulties inherent in this type of projection. It strikes the reviewer that this is another example of the fact that some people have suddenly realized that the earth is round and are developing maps which appear to be rounder than the more scientifically developed kinds.

—A Geography Teacher.

Politics and Government Conference at Exeter

Over forty delegates from many New England schools were represented at the conference on Politics and Government held at Phillips Exeter Academy, May 13 and 14, under the auspices of the Herodotan Society. It was the aim of the conference to seek means of stimulating greater interest in politics not only among the delegates themselves but also in the schools from which they came. Following the conference meetings a permanent organization to be called the Interscholastic Association for Politics and Government was formed. The group will hold annual meetings to which delegates from public and independent schools will be invited. A description of the 1944 conference at

Exeter was inserted in the appendix of the *Congressional Record* for May 19, reports The Summer number of the *Phillips Exeter Bulletin*.

Speakers at the Exeter meetings included Secretary of the Navy James V. Forestal, United States Senator Joseph H. Ball of Minnesota, Governor Robert O. Blood of New Hampshire, and Professor Benjamin F. Wright of Harvard University. Mr. Mark Emerson, then of St. Paul's School, now of Friends Central of Overbrook, Penna., also led discussions. Schools represented were Andover, Brookline High School, Brooks School, Browne and Nichols, Choate, Dana Hall, Hope High School in Providence, Lawrenceville, Loomis, Middlesex, Milton Academy, Moses Brown, Newton High School, Pomfret, Roxbury Latin School, St. Mark's, St. Paul's, Taft, Walnut Hill, and Winsor School.

The Educational Register

The new, improved, and enlarged *Educational Register*, published by Vincent-Curtis, 137 Newbury Street, Boston, Mass., has been sent to us for examination. This useful, annual publication containing so much school and camp news can be obtained free-of-charge from the above concern. Many of the articles are written by men active in the affairs of the Secondary Education Board, and, indeed, occasional contributors to The Independent School Bulletin. Messrs. George Van Santvoord of Hotchkiss, George C. St. John, Jr., of Choate, Willet L. Eccles of St. George's, Harrison L. Reinke of The Fay School, and George R. H. Nicholson of Kingswood School, West Hartford, Conn., are among the contributors.

Educators Guide to Free Films

The Fourth Annual Edition of the *Educators Guide to Free Films* has just come to our attention, and we feel rather crestfallen to have spent the past three years in our classes without the benefit of this book. The Educators Progress Service, Randolph, Wisconsin, is to be congratulated on making available to school teachers such a complete and carefully annotated listing of free film materials. The compilers have listed the source of each of 2,156 motion picture films and 203 film slides. These can be easily found in the two indices which list them under Title and Source respectively. Furthermore, the material in the book is grouped under subject headings to facilitate the use of the listings.

The topics covered by the films include all subject matter amenable to visualization. Many of the items are produced by commercial concerns either for advertising purposes or as part of the company's training program. There is no rental charge made for the use of the films, although most companies ask that transportation charges be paid by the user. If all of the films listed are comparable to the ones this reviewer knows, no fear should be felt in introducing them to the classes.

—Thomas F. Morrison,
Milton Academy.

News in General

The Episcopal Academy has introduced a number of interesting innovations for the current year.

For the first time in its history, it has a boys' choir run entirely by the students. The choirmaster, William Dickey, is a Sixth Former who received his instruction in voice and organ at the Academy and achieved such success at it that he now directs a church choir in the city of Philadelphia besides supervising the Academy choir. Another Sixth Former has achieved similar distinction and expects to act as choirmaster when Dickey leaves for army service next February.

Among the new courses at Episcopal are World Geography, which will be taught in Ninth Grade in correlation with General Science and English, and a Social Studies course in Eighth Grade which puts stress upon preparation for life in a democracy. The latter course, which involves instruction in habits of study, courtesy and civic responsibility, leads to a second semester course in Pennsylvania and American History. This course is correlated with General Science and English, and in it use is made of rich Academy tradition to inspire students to active participation in civic affairs.

Because of lack of manpower in janitorial service, all boys at Episcopal have been asked to contribute 80 hours of their time during the year for such tasks as room maintenance, upkeep of grounds, etc. The plan has been very successful, and a lot of work has been done by the boys. A great many have given their Saturday mornings, a normal free time, to the cause.

In the three upper classes the St. Louis Country Day School provides in the curriculum for a combined physical conditioning course and military drill. The latter was introduced to aid in the transition from school to service, which now confronts most of the school's graduating classes. Letters from recent graduates now in service report that this course was of great benefit to them.

The school has many tangible reminders of the loyalty of its alumni. Since it has long been the custom of each graduating class to present

a "Class Gift" at Commencement, the total of these is now considerable. Many bronze tablets recording the winners of school honors are among these gifts. Through the generosity of the Class of 1941, the school is fortunate to possess an excellent oil portrait of the late Headmaster, R. H. B. Thompson. The gift of 1943 was in the form of a scholarship.

Each year the Alumni grants a full scholarship to the winner of competitive entrance examinations. This year's recipient competed with a field of 23 boys, all outstanding for their reputation for citizenship and scholarship.

After Mr. Thompson's death in 1942, the Thompson Memorial Fund Scholarship was set up. From this source one-half scholarship is awarded each year.

St. George's School announced during the summer the establishment of two full scholarships, to be awarded after a State-wide competition among the Boy Scouts of the Narragansett Council. One full scholarship for a boarding student will include the cost of his room, board, tuition, medical and accident insurance, medical, infirmary and nursing fees, reasonable laundry and pressing charges, laboratory fees and ordinary assessments. The other full scholarship for a day student from the neighborhood of the school, who lives within easy commuting distance, is to include tuition, lunches and laboratory fees.

The present examining committee is composed of Messrs. Bruce M. Bigelow, Director of Admissions of Brown University, Garrett D. Byrnes of the Providence Journal, Dr. Willet L. Eccles, Headmaster of St. George's School, A. Livingston Kelley, President of the Old Stone Bank of Providence and J. Harold Williams, Chief Executive of the Narragansett Council of the Boy Scouts of America.

The competition was so close this year that two full boarding scholarships were awarded, the winners being Charles E. Hopkins, Jr., of Barrington, Rhode Island, and Robert L. West of Cranston, Rhode Island; both winners are fifteen years old.

Fifty-two boys, ranging in age from 12 to 18 and coming from 11 states and the District of Columbia, were enrolled in the first official summer session at St. George's. Eight boarding schools were represented in the group, as well as a number of day and high schools. The session was under the direction of G. W. Wheeler of the St. George's faculty.

Many of the students worked regularly at paid jobs in the afternoons and more than half the enrollment earned some money during the eight and a half weeks.

Though disapproving of the continuance of the accelerated curriculum after the war, Headmaster Francis M. Froelicher, of Fountain Valley School, indicates, in a recent issue of *The FVS News*, the intention of the school to continue a summer session. The ideal location of the school in the Rocky Mountains makes this desirable.

Out of the 138 students enrolled at the Phillips Exeter Academy summer school, St. Paul's School, Concord, was represented by 9 boys, Milton Academy by 7, and Episcopal Academy and Lawrenceville by smaller numbers.

At the instigation of the Headmaster and the Board of Trustees of University School, Cleveland, a Retirement Fund has been established for the benefit of the faculty and staff. Those who wish to participate pay five per cent of their salaries and the school pays an equal amount.

Reports from Kent School and Berkshire School indicate that the hurricane of September last did little damage. Indeed, the torrents of rain which fell during the storm replenished a dwindling water supply. We solicit reports from other schools.

An eight-school, student government conference was held at St. Paul's School, Concord, New Hampshire, on Saturday, April 22, supervised by officers of the St. Paul's Student Council. The Honor System and the Student-Help systems being used in many schools to combat the labor shortage were two of the topics discussed. The schools represented were Choate, Groton, Lawrenceville, Loomis, Milton, St. George's, St. Mark's and St. Paul's.

The buildings of Avon School, Avon, Connecticut, are now being leased by the Army as a rehabilitation center for the blind. Only approximately 200 of the school's 2,700 acres will be used by the Army. The property has been leased for the duration of the war and six months afterwards.

Northwood School, Lake Placid Club, N. Y., has been taken over by the Army to be used in connection with Lake Placid Club for a Redistribution and Recreation Center.

As the result of the interest expressed by a number of parents, an inter-school orchestra has been formed with the Moses Brown and Lincoln School orchestras as a nucleus, and Mr. J. H. Mitchell, director of Upper School music at Moses Brown, as the conductor. Students from all the independent schools in Providence participate (20 boys and 20 girls). The orchestra meets Sunday afternoons in Alumni Hall, Moses Brown School, for an hour and a half, and rehearses popular-classical music. The activity is sponsored by a committee of the Parents League of Providence, and by the following schools:

Lincoln School
Moses Brown School
Providence Country Day School
St. Dunstan's School
Mary C. Wheeler School

News of School Faculties and Administrative Officers

The summer issue of *The Phillips Bulletin* (Andover) brings news of the death of James C. Graham, for over forty years a teacher of science at the Academy. The same publication records the retirement of Lester E. Lynde after forty-three years of service as instructor in mathematics, director of admissions and Dean; also of George F. French, head of the French Department; and Roy E. Spencer, who retires from Andover after twenty-seven years as a teacher of English. Dr. R. I. W. Westgate, author of *Summer Schools in 1943*, published in The Independent School Bulletin for February, has left Andover to become Director of the Latin and Greek Department at the Brooks School.

The appointment of Oswald Tower as faculty dean and G. Grenville Benedict as dean of students has been announced by Claude M. Fuess, Headmaster of Phillips Academy, Andover. Mr. Benedict is a former editor of *The Phillips Bulletin*.

Alexander Gibson, after five years as head of the French Department at Mount Hermon School, has left to teach French at Phillips Academy, Andover. He has been active in the affairs of the Secondary Education Board.

The corporation of Browne and Nichols School have announced the appointment of Erie Albert Tucker, formerly chairman of the mathematics department at the school, as Headmaster to succeed Warren C. Seyfert, who resigned to accept appointment as Director of the Laboratory School and Associate Professor in the department of education of the University of Chicago.

The new Headmaster of Carteret School is Frederick De Wolf Pingree, who will succeed Roy S. Claycomb, Acting Headmaster. Having recently acquired new facilities on the former Loree estate the school plans further expansions.

W. W. Norton and Company has just published an edition of Uslar Pietri's *Las lanzas coloradas*, a novel of the Venezuelan War of Independence, edited by Donald D. Walsh of The Choate School Faculty. This is the third work that Mr. Walsh has published in the field of Spanish American literature.

Mr. S. Atherton Middleton has left the Episcopal Academy faculty to assume the headmastership of St. Paul's School in Baltimore, Maryland.

Mr. Arthur Lyon Lyon-Vaiden has been appointed chaplain at the Episcopal Academy to succeed Mr. William Jefferys, who has joined the chaplain service of the United States Army.

After being associated with the art work at Fountain Valley School ever since its founding fourteen years ago, Mr. Boardman Robinson has resigned to devote his time exclusively to working with adults. He is director of the art work in the Colorado Springs Fine Arts Center.

Mr. Clayton Farraday, formerly Dean of Boys at Friends Central School, has been appointed to the position of Assistant Headmaster.

Mark F. Emerson, head of the department of public affairs, St. Paul's School, Concord, has resigned to become registrar of Friends Central School, Philadelphia. He succeeds Leonard L. Howeth who becomes Headmaster of the Devereux School, Devon, Penna. Mr. Emerson is succeeded at St. Paul's by C. C. Buell, formerly of Greenwich Academy and Milton Academy.

The *Alumni Record* of the Germantown Friends School records a celebration at the school last spring in honor of Harry A. Domincovich and D. Lawrence Burgess, who had completed thirty-five years of distinguished teaching there. Tributes to these two teachers were written for the *Record* by various alumni, including Elizabeth Janet Gray, author of the Newbury prize book, *Adam of the Road*, and Leonard Carmichael, president of Tufts College.

William G. Dexter, a graduate of Milton Academy and Williams College, has been appointed head of the new lower school at the Hackley School. Mr. Dexter has been a teacher of English and Science at Hackley. The new elementary school will be separate from the upper school, having its own teachers, classrooms, study hall, and dormitory.

For two years Father Sill, Headmaster Emeritus of Kent School, has been at work on a book entitled *Pater Recalls: The Story of Kent*. Though still completed only up to 1930, the book is being published in abridged form in *The Kent News*. The first installment appeared in the issue of Wednesday, September 20.

Charles Harlow Raymond, after 44 years of teaching at Lawrenceville School, is retiring from his positions in the faculty as Chairman of the English Department and Master of Cleve House. His father, also a former master at Lawrenceville School, is now 90 years old. Together the years of service of father and son total 81.

The Rev. Howard L. Rubendall, minister of the First Presbyterian Church, Albany, N. Y., and formerly of The Hill School, was elected headmaster of Mt. Hermon

School at the spring meeting of the board of trustees of the Northfield Schools. He succeeds Dr. William E. Park, Northfield Schools president and acting headmaster for a year.

Hans Froelicher, Jr., of the Park School, Baltimore, has an article in *Parents Magazine*, June, 1944, entitled *Why Private Schools?*

A Special Service Award for outstanding service has been presented to Headmaster Wilbour E. Saunders of Peddie School by W. H. Allen, New Jersey Secretary of Agriculture, in recognition of the school's farm project and the volunteer farm work performed by Peddie students.

Donald E. Wilson, teacher of history and director of publications at Western Reserve Academy, has accepted a position at Peddie School as head of the lower school.

Dr. Richard Knowles, Ph.D., former head of the English Department at Avon School has joined the faculty of St. George's School. Dr. Knowles will teach French, Greek, and guide the destinies of certain students doing advanced work in English.

Announcement was made at the Commencement exercises that the Board of Trustees of the St. Louis Country Day School had elected Mr. Ashley B. Sturgis, Headmaster. Mr. Sturgis had served as Assistant Headmaster from 1921 to 1942 and had been Acting Headmaster from 1942 to 1944.

Friends of Major Frederick W. Hackett, for many years Assistant Headmaster of St. Mark's School, will be interested to learn of his marriage to Mrs. Herbert Meeks Tenbroeck of Montclair, New Jersey, and Charlottesville, Virginia. Major Hackett is now in the American Military Government service.

Mr. Archer Harman, for many years teacher of Latin at St. Paul's School, has been relieved of his teaching, and, as Director of Admissions, spends a great deal of time traveling in the interest of the school.

Erdman Harris, chairman of the department of religion at Lawrenceville School for eight years, and well known as an exchange preacher by other schools, is the new Headmaster of Shady Side Academy in Pittsburgh. He succeeds Clifton O. Page, appointed temporary headmaster when Mr. Merriman went into the navy.

Mr. Daniel J. Pinto, head of the department of social studies at the Summit School for Boys, has recently been appointed Assistant Headmaster. Mr. Pinto, who came to the Summit in 1942, was formerly principal of the Manahawkin School at Manahawkin, N. J.

Three new faculty members at the Thacher School, Ojai, Calif., are Kilbrith Jordan Barrows, Charles B. Beck and Kathleen Stock Uhler. Mr. Barrows, formerly at Phillips Academy, Andover, will teach history; Mr. Beck, who comes from Friends Select School, Philadelphia, will teach mathematics; and Miss Uhler, music. Miss Uhler comes from Beaver Country Day School, Brookline, Mass.

Mr. Archibald V. Galbraith, Headmaster of Williston Academy, recently celebrated his twenty-fifth year in that position. Before going to Williston he had previously taught at Middlesex School, Milton, and Penn Charter.

NEWS OF GIRLS' SCHOOLS

Editor, Ethel Andrews, Laurel School

The Northfield Conference

It is the deep conviction of the Board of the Northfield League that it has a continuing responsibility to the girls of the secondary schools and colleges, so it offers an opportunity of meeting together for periods of worship, fellowship and discussions in conferences, to help clarify their religious thinking, deepen their faith and open new channels of creative living to them. Thus the Northfield League directed three conferences in June, 1944: the Girls' Conference, the Senior Conference and the Lake Erie Regional Conference.

The Girls' Conference and the Senior Conference returned to the Northfield Seminary campus in Massachusetts to hold their conferences simultaneously from June 15th to the 22nd. At the Girls' Conference, 23 schools and 9 city delegations were represented from the areas of Philadelphia, Baltimore, Boston, Albany and New York, making a total of 433 girls in attendance. The Senior Conference was composed of 40 girls from 10 different colleges, churches and cities. To the Lake Erie Regional Conference, the League's "pioneer" two-year-old girls' conference, held at The Lake Erie College, Painesville, Ohio, from June 22–29th, came 78 girls from the high schools in the Erie-Pittsburgh-Buffalo-Rochester area.

The program of each conference was divided into the following groups: worship, a conference hour for the Essentials of Faith; Bible classes and interest groups dealing with the application of religion to one's life, family and community. Some of the leaders who added much inspiration and enthusiasm to the Conferences were: Dean Howard Thurman, Dean Donald J. Campbell, Lt. Comm. C. Leslie Glenn and Dr. Albert T. Mollegen at the Massachusetts Conferences; and Dr. Arthur B. Kinsolving, Rev. James T. Cleland and Mr. and Mrs. Winburn T. Thomas at the Lake Erie Conference.

—Margaret Gale,
Executive Secretary.

The Lake Forest Conference

All members of the Headmistresses Association of the Middle West who were present at the recent Lake Forest Conference were reassured of its value and convinced that the conference should be held next year. There were eighty-seven girls registered from sixteen different schools, each with a faculty member, Eleven heads of schools enjoyed the conference for at least part of the six days. The pleasant companionship about the tables in the Ferry Hall dining-room was a happy conclusion to a busy school year for those who had hurried through the end-of-the-year work to have at least a glimpse of the second Lake Forest Conference.

Dr. Cotton gave a fine talk the opening night of the week, and Dr. Little made Sunday rich in inspiration by his sermon in morning chapel and his wise handling of many questions during the afternoon discussion period. Rabbi Bamberger, who replaced Dr. Binstock, stirred our minds deeply on post-war problems. The girls enjoyed especially their contacts with Father Heuss. He opened each day with a chapel service, followed by a Bible class, and he gave generously of his time through the day for conferences with small groups of girls who gathered informally on the lawn, the steps of North Hall or in the lounge. He also gave valuable help to those in charge of the conference in making plans for next year.

Under the leadership of the Conference Student Committee there were spirited discussions of student activities in the schools represented. A girl from each group had an opportunity to explain her school's plan of government, and the athletic program. Everyone enjoyed the free discussion and comments by the girls.

The swimming in the lake, the baseball games on the field back of the school, and the evening snacks which were accompanied by questions, expression of convictions and doubts, and longings on the part of many to "talk all night," made an important though informal contribution to the lives of the girls during the conference. During the question periods there was never enough time for answering queries. Many hands waved in the air unsatisfied when it was time to close the evening meetings. And those who humbly admired the questioners of the first evening found themselves on their own feet before many meetings were done, expressing and asking opinions.

All who shared in the benefits of the conference and enjoyed the delightful hospitality of Ferry Hall are grateful to those whose wisdom and devotion made this second conference possible. To Miss Tremain, Miss Lake, Miss Angell, and the other members of the committee we wish to express our thanks. It is a good thing to give young people opportunity for new friendships and new outlets for deep thinking through such a conference.

—Florence E. Fessenden,
Hillsdale School, Cincinnati.

Visual Instruction at The Packer Collegiate Institute

Brooklyn, N. Y.

We have been committed to visual instruction at the Packer Collegiate Institute ever since the founding of the school a hundred years ago. We have even stronger convictions now that seeing is believing and that visual aids are necessary to ensure the best results in the learning process in almost any field of elementary, secondary and collegiate education. We belong to the Alice in Wonderland school of thought—"What is the use of a book without pictures?" The way in which we have built up a large collection of photographic material for visual instruction at slight expense, may be of interest to other schools.

About twenty-five years ago we began a collection for the entire school, elementary, secondary and collegiate. Before that each grade and each department had assembled a collection for its own use and some of them were maintained and added to afterwards. The general collection did not originate in the library, as is usual, but in the Junior College department of the history of art which had a very large collection of fine photographs and slides. The instructor in history of art took over the job of making these available to the entire school and of increasing the collections beyond the limits of art history, adding visual material for classes in history, languages, literature, mathematics and science and for special projects such as a set of views of Central and South America for classes in Spanish, a set of pictures for the fourth grade illustrating the history of transportation—land, sea and air—, pictures for the Civics classes illustrating the National Government, its departments, officials and functions. At the moment we are assembling pictures to illustrate the history of map making which will include color facsimiles of historic maps.

The collection is kept in the history of art room where its catalogues and files may be consulted and students and teachers may borrow

photographs and slides to use as illustrative material for special topics, class discussions or exhibitions. The illustrations are shown in various ways—handed around in class; hung on bulletin boards in class rooms or on burlap-covered walls of a hall reserved for exhibits; projected by a lantern or the reflectoscope in class or after school. The topics for which illustrative material is wanted have a very wide range, for example, Daumier's political cartoons, examples of dynamic symmetry, the time of Richard II in England, the early Aegean World, women at work in World War II, Egyptian life. Some teachers and students ask for specific pictures, others with a period, place or person in mind want certain pictures but would like to know what else is available. The history of art instructor suggests extra material and when no specific pictures at all are called for, chooses a whole group of reproductions which will be relevant to the topic and to the age group using them. She also keeps the teachers informed about illustrations of importance to their subjects. We believe that the use of visual material in a school is usually neglected because the mechanics of collection and filing as well as choosing and having available at the right moment for a class is so time-consuming that most teachers find it too difficult.

We now have about fourteen thousand photographs and three thousand five hundred slides. We have more photographs than slides because it is easier and cheaper to build up a good collection of black and white and color photographs and because we have a reflectoscope for their projection. The reflectoscope projects slides as well as photographs and we also have a portable lantern for glass slides as well as a portable projector for film slides.

We have spent very little money directly for photographs. Students and alumnae have been generous with gifts of reproductions and we were fortunate to receive a gift of a large collection of fine art books and photographs from the Carnegie Corporation of New York. We have steadily added photographs from many sources —pamphlets, sales and exhibition catalogues and from magazines, from the *International Studio* later *The Connoisseur*, the *Art News*, *Burlington Magazine*, *Architectural Record*, *Illustrated London News*, *National Geographic Magazine* and others. Some of our material comes from discarded library books or even from a new book, an unbound copy of Craven's Masterpieces of Art, for example. Our aim at present is to increase the number of color illustrations, especially in the field of art objects and views of places.

All good reproductions are mounted on light gray cardboard mounts, 11 by 14, and reproductions that are not as good are mounted on gray bogus paper for use until we get a better print. We have used a photographic paste (not to be had for the duration) which came in half gallon tins and was dry enough not to buckle magazine paper. The whole surface of the print is pasted, not just the corners, for it will have long and hard use. We have a catalogue but that is not necessary if the photographs are filed carefully under subjects.

Maps, charts, graphs, pages from books, students' written work, drawings and photographs can be projected by the reflectoscope, opening up all kinds of possibilities in class work. In remedial reading classes, the instructor uses a lantern to project slides of typewritten material which she prepares on a special transparent substance. Our visual equipment also includes a sound motion picture projector for which many satisfactory films may be rented.

One of the most important of the visual instruction projects at Packer is carried out by our docent who plans trips for groups of students to churches, museums, factories and industrial plants, theatres, operas, historic buildings, etc., using New York as a laboratory. She keeps the teachers informed about new and interesting things to see, makes arrangements for the trips and conducts them. Without her much of this very important direct visual contact would be impossible.

—Marguerite L. Bourdon.

Art and Music at Dana Hall
Wellesley, Mass.

The school's program in the arts is not designed solely for students interested in developing their creative faculties or in making a formal study of art and music. It is based on the belief that contemporary art and the art of the past have a significance for all students. Monday nights are often devoted to a lecture by Mr. Chapple or Mr. Mangravite, open to the community as well as to the Dana Hall Schools. Each girl is encouraged to believe that she can contribute something to the arts as a patron, and that she can derive from them greater enrichment of her life.

Several times during the year the art department arranges exhibits in the school. Two series of reproductions of modern painting, loan

exhibits, were presented last year. Three of New England's museums,—the Isabella Stewart Gardner Museum, the Museum of Fine Arts in Boston, and the Worcester Art Museum,—are easily accessible. The aim of the art department at Dana Hall is to prepare and train the student to look until she learns to see,—that is to say, until her vision has been sharpened and her sensibilities refined. In the studio the fundamental principles of drawing and painting are practiced by the actual use of different media. After the potentialities and proper use of tools and materials have been explored, the pupil is led to make a personal graphic utterance. This may take form in a pictorial statement about life or nature, or it may emerge in the form of a visual illustration of an idea, or an industrial design for practical use. Judging from the response and accomplishments of our students, we have justified our belief that from the point of view of the student's fundamental growth as a well-rounded human being, art is indispensable in education.

From an article by Peppino Mangravite in the Dana Hall Bulletin.

In considering the relationship between the art of music and the girls, it must be realized that there are three channels through which the two may meet: through special musical instruction for the few, through participation in music-making by the girls themselves, and through listening. In many ways participation in music making is the most important, and only through singing can the ordinary music lover do this. Choral singing is perhaps the only means by which amateurs can achieve the same standards as do professionals in other fields such as orchestra and chamber music. At Dana Hall the system of having the whole school act as a chorus is one of the best ways in which music can be brought to the girls, and it is surprising to the uninitiated what a high standard can be reached in *a cappella* and accompanied singing. The smaller chorus of nearly a hundred voices contains few who are serious music students, and yet in the last three years they have joined forces with choruses from boys' schools to perform works by Bach, Vaughan Williams, Holst, Randall Thompson, and the *Requiem* by Gabriel Fauré. In addition to chorus work, an annual opera is performed, alternating between Gilbert-and-Sullivan and Mozart. There are two ways in which the students' listening capabilities are developed: first, through the Bardwell Auditorium Course, which brings the finest artists to the school; and secondly, through a series of talks with illustrations on the various aspects of musical form, style and evolution.

As the real value of education, whether musical or otherwise, should be felt after school is left behind, the aim primarily is to develop a musical taste that will enable the student to discriminate later on between the good and the less good. If this is done, then the question of whether popular music is good or bad becomes academic, as a person with good taste and good judgment can keep a balance between art that has a spiritual meaning and that which has only a temporary entertainment value.

—Stanley Chapple,
Dana Hall Bulletin.

Student Assistance at Emma Willard School
Troy, N. Y.

During the past year at Emma Willard, the War Council correlated the school's program of knitting, sewing, making scrapbooks, the home nursing course, and selling of bonds and stamps. The School Council continued as the dynamo for matters concerned with school government, and the Athletic Council arranged special events for the Department of Physical Education. This year attention is focussed on the Work Council, which channels student assistance in the areas where added help is needed. The following is a description of the experience of students under the direction of the Work Council.

A few days after the seniors arrived in their dormitory at Emma Willard School this fall, they were offered (by means of impersonal bulletin-board solicitation) an opportunity to sign up for various housekeeping duties; for assistance in the library; for dining-room routines. To them probably this was no surprise, because prior to the June Commencement they had requested that, in addition to required care of room and table service, some sort of campus "chores" be made available during 1944–45 to all resident students. The juniors and underclassmen were glad to find that they, too, might have a part in this program, which is under the direction of the Work Council.

To begin with, the Council consists of one representative from each of the four high school classes. These students, with a faculty adviser, meet each Friday to consider the schedule for the weekend ahead, as well as to report on the activities of the past Saturday and Sunday. Miss Anne Wellington, headmistress, and Miss Gladys Lott, director of residence, are present

to enter into the discussion which is sure to follow.

Let it be said at this point that the faculty adviser, Miss Vera Smith, acts primarily as the Council's coordinator. Following conferences between Miss Smith and the housekeeper and librarian, for example, a monthly schedule of weekend opportunities for service was posted, affording students a chance to choose the time and the kind of work (first and second choice) they preferred to do. Students also may sign up to assist a member of the staff charged with gathering and arranging flowers in the living rooms; or to clean tack in the riding department under the supervision of the faculty head of equitation.

From then on it is the class representatives who pick up on the weekends. Each Friday evening, when the School meets for knitting and bandage rolling, the representatives instruct their classmates where and to whom to report, satisfying themselves that the volunteers are assigned in accordance with preferences, so far as the needs of staff heads permit.

The special requirements of work in the dining-room or tea house necessitated that the forty-two girls who quickly signed up for such jobs as setting tables, serving at the buffet, and buttering rolls, report to the dietitian on the same day for six consecutive weeks. In this particular instance, the experience of working under trained personnel is proving to be an especially valuable one, since the six-week "exposure" to a regular routine has all the benefits of drill, without the drawback of monotony. Volunteers not only gain an understanding of problems of dining-room management—they also develop a pride in the efficient discharge of routine duties. Best of all, students have gained a respect for manual labor, and a new kind of feeling for their school, as they learn the meaning of co-operative enterprise.

—Helen J. Marx.

The Baldwin School
Bryn Mawr, Pa.

During last summer the Baldwin School played a new role in the community when it lent its kitchens, with their feudal proportions and modern equipment, to the Emergency Aid for courses in canning. Members brought their own produce and canned till sunset; while outside the school's energetic neighbors and the Emergency Aid were busy cultivating individual victory gardens until the campus blossomed with carrots and onions.

Classes began on September 21st, and one can literally say that the students gathered from the four quarters of the earth, for the school welcomed girls from England and Puerto Rico, India and California. Twenty-three states were represented and seven nationalities. To the executives and faculty this has been a year of interest and challenge, for this is their first opportunity to discover ways and means of carrying out the recommendations of the Evaluation Committee, which, in February, 1943, rated the school's administration, staff and pupil activity program as very superior, its curriculum and plant as superior. Chief improvements this year have all been in line with the Committee's recommendations. The Upper School Study Hall has been transformed into a library more convenient because of its centralized position and because the books have been concentrated there. That it is more comfortable and pleasant no one can deny who has sunk into one of the leather chairs and enjoyed a period of quiet study in its tranquil atmosphere. The life of the Residence has also been reorganized; the house mistresses of former days are superseded by heads of corridors, whose charming sitting rooms, accessible to the students at all hours, are more reminiscent of home.

There have been several changes in the curriculum. One of the most interesting of the new courses is described by the head of the Science Department.

> This year we have completed our science sequence throughout the school by introducing a course in world geography at the Ninth grade level. Thus it starts at the top of the unspecialized sciences and serves, to some extent at least, to point the way to those who want to enter the field of the biological or of the physical sciences during the last three years of school. This course begins with the story of the origin of the earth and its place among the heavenly bodies. A brief survey of its physical development follows, with a swift look at biological evolution and primitive man. The real weight of the course centers on the relationship of man to the materials at his command, with emphasis on the geological history and topography of the land as determining climate and presenting a challenge which colors man's activities and accomplishments in a given area. The theme is thus, really, economic geography with special stress on the interdependence of man everywhere on a world-wide scale.

In its report on the school, the Evaluation Committee highly commended "the fine co-operative spirit among the students and between students and faculty." Nowhere has this spirit been more evident than in the Service League.

Besides raising a sizable budget of money for its contribution to various organizations such as the United War Chest, the Red Cross, numerous relief agencies, the World Students Service Fund, the Baldwin Play Center of the Lighthouse Settlement of Philadelphia and others, the Baldwin School Service League has pledged gifts of time in various activities. For example, about twenty-four girls have given a full afternoon a week for one semester to working in the Bryn Mawr Co-operative store. A second group has gone one afternoon a week as volunteers to the Haverford Community Center, where the girls have assisted the workers in directing games and crafts for the children of the negroes and whites resident in that district. Nine other girls have given a total of twenty-one weekends to the project of the Week-end Work Camp of the Yearly Meeting of the Religious Society of Friends of Philadelphia and vicinity, a project which is part of the plan of the Philadelphia Housing Commission for rehabilitation of old houses badly in need of repair. With the cooperation of the tenants, and with supplies paid for by the owners, the work-campers have repaired, cleaned, papered and painted these old houses. A very active "Bandage Rolling Club," whose slogan is "48 a day or bust," has made supplies for the Maternity Ward of the Bryn Mawr Hospital:—4,154 applicators, 540 tongue boards, and 1454 other dressings. In addition they have folded 16,463 four by four squares for the Naval Hospital, and knitted 45 Navy watch caps for the Red Cross.

The League has also reached out to the American children of Japanese ancestry in the relocation center by sending boxes of presents at Christmas time. Through gifts of money, and boxes of old clothing it has reached out to Russia, Yugoslavia and Greece. The French Club is working on clothing and cuddle toys to be sent to France through the American Friends' Service Committee.

A great many other girls have continued throughout the year the work they began last summer through the Junior Emergency Aid, or the Junior Navy League, as hospital aids or in other services. But whatever they have done, they have showed that a sound education is the best preparation for meeting the challenges of this changing world.

Milton Academy Girls' School
Milton, Mass.

Milton Academy Girls' School now offers to its Senior students a course in physical geography. After an introductory treatment of those laws and phenomena of elementary physics as are basic to an understanding of later work, there has followed a study of physical environmental factors: atmospheric conditions and daily weather, climate, soils, and surface features. Stress has been laid primarily upon principles, reasoning and techniques of meteorology, geology and climatology, but with constant reference to the importance of physical forces upon man. After this discussion and its incidental use of maps there has been a block of work devoted to the mechanics and history of map-making, of map projections, and of map-reading, especially the reading of marine charts, airway maps, aerial photographs, and military and topographic maps. In conclusion several weeks are devoted to unification of ideas previously discussed and to a consideration of the effects of dynamic earth forces upon man, his distribution, his war strategy and his post-war thinking.

No text sufficiently detailed in all the ramifications of the course has been found and so a different book is used for each unit. Several of the texts were published particularly for use in Army and Navy courses and contain essential facts concisely written and vividly illustrated.

The course has served its threefold purpose, namely, to provide for practical scientific study involving applications of elementary mathematical procedures, to afford instruction in wartime essential fields, and to demonstrate the important part that natural forces play in determining the prestige of various world communities.

Low-Heywood School
Stamford, Conn.

Mary Horne, a teacher of mathematics, Low-Heywood School (Stamford, Conn.), has been named headmistress. As reported in School and Society, July 22, the school plant was recently sold to the Eastern Military Academy, and plans at the time were for the discontinuance of the school. Parents of the former pupils, however, have formed a non-profit corporation, and an "unnamed benefactor" has purchased an eight-acre estate in Stamford for the purpose of insuring the future of the eighty-three-year-old institution, which will be known as Low-Heywood, Inc. Ralph Cordiner, assistant to the president of the General Electric Company, has been named chairman of the Board of Governors which includes Stewart H. Pringle, an attorney of Stamford; Gibb Lyon, president, First National Bank, Stamford, and Mrs. J. King Hoyt, an alumna.

—School and Society, Aug. 5, 1944.

Interesting Speakers Heard Last Year

At the Mary C. Wheeler School, Providence, Rhode Island

Dr. Stephen A. Freeman, Vice-President of Middlebury College
Dr. J. Edgar Park of Wheaton College
Mr. Gordon Washburn, Director of the Museum, Rhode Island School of Design

At Lincoln School, Providence, Rhode Island

Dr. Arthur Howe Bradford of the Central Congregational Church, Providence
Dr. Arthur L. Washburn, Chaplain of Brown University

At Dana Hall, Wellesley, Massachusetts

Senora Isabel O. de Palencia, Spanish writer and former Spanish Minister to Spain
Mr. Ray Brock, War Correspondent from the Balkans
Dr. Max Lerner
Mrs. Harper Sibley, General Chairman of the Northfield Conference
Miss Sara Jean Colville, from the National Nursing Council for War Service
Miss Margaret Speer, Dean of Women, Yenching University, China
Dr. Howard Thurman, Negro Educator, and Chaplain of Howard University
Dr. Herbert Gezork of Wellesley College
Dr. John C. Ferguson, Founder and first president of Nanking University, China
Mme. Kung-Shou Wang, wife of the Chinese vice-consul in Boston

At Laurel School, Shaker Heights, Ohio

Dr. Hans Kohn of Smith College
Mr. Spencer Irwin of the *Cleveland Plain Dealer*
Miss Margaret Johnson, School of Applied Social Sciences, Western Reserve University
Mlle. Jeanne Saliel of Smith College
Miss Mary Anne Dilley, Katharine Gibbs School
Mme. Irina Khrabroff, Russia
Miss Anne Erste of the Federal Reserve Bank
Mrs. Robert P. Rhoads of Barnard College
Mr. Ricardo Perez, Mexican Consul in Cleveland
Miss Eleanor Dolan, Dean of Flora Stone Mather College
Professor Eduard C. Lindeman, New York School of Social Work

NEWS OF ELEMENTARY SCHOOLS

Editor, Edgar R. Krepps, Collegiate School

One member school of the Board plans its schedule so that each faculty member is able to spend one day a semester visiting another independent or public school while the school visited is in session. In this way the teacher sees other teachers in action and comes back to his own school refreshed with ideas which he otherwise might never have discovered. In a subsequent faculty meeting he reports to his faculty group, and new ideas for the betterment of his school are constantly coming in. The chief purpose of the Bulletin is to provide for an exchange of ideas among the member schools. Will you not help by sending news of your Elementary School to the editor of this column?

Edgar R. Krepps, Collegiate School,
241 West 77th Street, New York 24, New York

Derby Academy at Hingham, Massachusetts, sends the following news of its Preprimary School. The Preprimary opened on September 13th for its second year in the Cherry House, on the edge of the Upper School grounds. The director is Mrs. Carol Robinson, serving her tenth year. There are four assistants and thirty-eight children. Of these, twelve older ones stay for lunch, rest, and play, leaving the school at 2:15 in the afternoon. Transportation is provided by the school through business arrangements with seven teachers and two parents. The Preprimary School has grown about threefold in the past three years. A successful Nursery group session was held as a day camp during the summer.

Derby's Lower School has a new director this year in Mrs. E. Lane Warren, former reading teacher at Beaver Country Day and Derby. Greater stress is being laid this year on proper grade placement; the requirements for Grade I have been raised; three of the staff have been trained in remedial reading; and pupil responsibility through definite tasks is being encouraged. A carefully planned program for the afternoon is being worked out which includes: outdoor sports, crafts, stories, music, art, Junior Red Cross and rhythms.

The announcement of the sixty-first opening fo the Lincoln School at Providence, Rhode Island, contains, in addition to the calendar of autumn events, a list of last year's graduating class and their college enrollment, a page on the faculty and an interesting section on school regulations. To this end the school suggests:

1. Definite hours for home study uninterrupted by radio or telephone calls. A definite, accustomed place for study. There is no excuse whatever for consultations with other students about school work. Assignments may always be obtained by calling the school.

2. No outside engagements during the school week.

3. Adequate preparation for Monday's work over the week-end. Set times with uninterrupted schedule and special planning are necessary to this end.

4. The cooperation of the home in the curtailment of unnecessary and non-essential activities at this time when transportation is limited and time-consuming, particularly during the winter term when the daylight hours are short. Work and play are both essential and must be carefully and wisely balanced.

LINCOLN also announces that Miss Mildred Crosman Breed, A.B., Vassar; Ed.M., Harvard, has accepted a position as Director of the Elementary School. For several years Miss Breed has been at the BEAVER COUNTRY DAY SCHOOL in the work of teaching, testing and remedial reading.

The *Beech Hill Breeze*, an informative paper of some fourteen pages, is a splendid example of what can be done with a mimeograph, paper and an engaging way of writing school news. Published by the DUBLIN SCHOOL of Dublin, New Hampshire, it contains a wide variety of interesting news items about boys, faculty, the school and the town of Dublin. The editor, who remains anonymous, has gathered a remarkable amount of news of boys in service, boys and teachers on summer vacations and news of Beech Hill which ought to make any DUBLIN SCHOOL boy want to be back again. We recommend a letter to its retiring editor for a sample of the kind of paper any old school boy would want to receive from his school.

Another excellent school paper is the *Rectory News*, published four times a year by the RECTORY SCHOOL of Pomfret, Connecticut. The *News* has a more professional appearance, with numerous articles by boys of the various grades of the school, editorials, "front page" news articles and some paid advertising. RECTORY's big news is the authorization for the construction of the Morgan Witter Rogers, Jr., Memorial Infirmary, which by now should be in its final stages. Other items are the Commencement Program, a list of prize books awarded, an interesting story of the annual faculty-boys baseball game and the Headmaster's letter.

COLLEGIATE SCHOOL of New York City opened a nursery school class for four-year-olds at 67 East 89th Street on October 4th. The enrollment in the Pre-primary, Lower and Upper Schools at 241 West 77th Street has reached a record high. Divisions of classes were necessary to care for new enrollments. Four new members have been added to the faculty and Mr. Henry G. Carpenter, for over thirty years a teacher in the Lower School, has accepted the full time position of Alumni Secretary.

Among the interesting talks at FESSENDEN SCHOOL during the spring term were lectures by Dr. Kosambi on school life in India, and Indian customs; by Mrs. Senoret on Chile, her native country; by Agent Dingwall of the Federal Bureau of Investigation; and by Mrs. Gallagher of the local (Newton, Mass.), court. The boys at FESSENDEN had a varied bill-of-fare to choose from!

WE RECOMMEND . . .

SCHOOL AND SOCIETY

"The present war (*i.e.* the Civil War) . . . has cost us how many valuable lives; but it has made many lives valuable that were not so before, through the start and expansion it has given.

"A man searches his mind for thoughts and finds only the old commonplaces; but at the same moment . . . he makes a distinction he had not made. . . . Where was a wall is now a door. . . . The point of interest is here, that these gates once opened never swing back."

So Albert Lewis,[1] Second Lieutenant Air Corps, quotes Emerson, and then states the conviction that underlies a great number of the articles in these recent issues: "It is incumbent upon men to seize the rushed opening war creates and move forward. . . . The freedom to alter history lies within the necessity of the moment." Educators are favorable to taking up the challenge; the great questions are how they are to help, and into what fields the rushed opening should lead. Some obviously pertinent experience is recorded.

Franklin Prager,[2] warrant officer, U. S. Army, is spokesman for army successes in many aspects of education: in methods of presenting linguistic and technological subject matter; in enforcing a "late-to-bed-and-early-to-rise" policy as a mental and physical builder of soldiers; in toughening and conditioning men through uni-

[1] SCHOOL AND SOCIETY, Aug. 12, '44, *Emerson and the War.*
[2] SCHOOL AND SOCIETY, Oct. 7, '44, *The Changing Character of Education.*

versal as opposed to "star" physical training; and in the use of visual aids.

Louis Foley[3] presents the most shocking evidence of laxity in civilian school administration, based on "sentimentally 'democratic' distribution of awards, resulting in irresponsible promotion of illiterate students." When he states that "data from objective evidence indicate that, as a conservative estimate, 15 of 100 students who enter our colleges and universities are quite comparable" (to his horrible example), one cringes. If war has rushed an opening into this situation, there can be no doubt how to seize it.

But in the matter of proper studies for future America, rival prophets sharply dissent. Some attempt to nourish their own flames by darkening the aspect of supposed alternatives. Such is the manner of the attack of Boyd H. Bode[4] on all liberal education that is not "Experiential". The idea that words themselves may be experiences (and experiences in relativity), and that the records of experiences by experts in living may be experiences of special value, apparently does not appeal to him. He poses social living as the only alternative to a "closed system" of ultimate truths. A close comparison of his article and the answer by John Pilley[5] is enlightening, particularly in the parallel the latter draws between the liberal teacher of philosophy and the liberal scientist. It recalls a dictum which, I believe, originated with I. A. Richards: the purpose of a good theory is to save us from a worse one. Mr. Pilley says of liberal education: "(it) consists in encouraging young people to think for themselves, not only about their material environment, but also about themselves as free and responsible human beings."

Ordway Tead[6], Chairman, New York City Board of Higher Education, is "deeply excited about the value of philosophy in college education." He considers it not only good at the college level, but essential. He proposes twelve questions (too long to quote here) as relevant to present philosophic inquiry and study. He specifies an approach through living problems, and teachers "with a synthesizing capacity, with a passion for truth-seeking, with skill in being vivid generalizers, with an alert awareness of the big problems of life." It is a sizable order, but unless we are indifferent to "the freedom to alter history, (which) lies in the necessity of the moment," it compels consideration.

One article of special interest concerns postwar education of German youth. It is written by Werner Peiser[7], whose earlier analysis of the failure of republican education in Germany after the last war was noted in these reviews. He puts the burden of administrative problems on the shoulders of the United States, specifying that the government should solve difficulties arising from the strangeness of continental conditions by co-operating with European experts. The practical task of teaching must be carried out by those in the respective nations who have proved their radical anti-totalitarian attitude. Mr. Peiser, though uncompromising in respect to all who are tainted with Nazism, gives evidence from German history which encourages him to hope the day may come when we can quote the optimistic words of Kant: "It is wrong to say that a nation is not ripe for freedom; it becomes ripe through freedom." The same hope, on a higher level of application, is the force behind many of the plans presented in these issues for postwar education in America.

—Mary L. Punderson,
Milton Academy Girls' School,
Milton, Mass.

The Classics

What Do You Read?

The newsboys' raucous query may well be put to our teachers of Latin. Some years ago a professor in one of our upstate New York colleges established a sort of correspondence reading circle to encourage the reading of the ancient classics. Programs were published, and readers reported progress. The creation of such an organization, presumably for teachers of the classics, indicated the need of an artificial stimulus for those who should have done their reading spontaneously.

I have no ways of knowing how much reading of the classics is done by those who teach Latin and Greek. I have my suspicions that on the secondary levels it would not make an impressive statistical total. Many college professors who write articles and books demanding for their production extensive research certainly

[3] School and Society, May 20, '44, *Passing All Pupils — and the Buck.*
[4] School and Society, June 24, '44, *The Problem of Liberal Education.*
[5] School and Society, Sept. 16, '44, *Professor Bode and Liberal Education.*
[6] School and Society, June 10, '44, *The Place of Philosophy in Postwar Education.*
[7] School and Society, Mar. 11, '44, *Re-education of the German Youth.*

read the classics. Reading, however, to find out how an author dealt with the pluperfect subjunctive is not the same thing as reading him for the purpose for which he wrote his book. If someone could give me an assurance based on fact that our secondary teachers continue to read not only the matter prescribed by their syllabus but a wide range of classic authors for the pleasure and profit that come of it, that researcher would earn my deep and lasting gratitude. From my occasional contacts with the late Professor Knapp I was led to believe that he was one who read the classics not merely because he was obliged to do research in philology, but principally because he loved the ancient authors. His attitude toward Vergil made me think of Tennyson's devotion to the Mantuan:

I salute thee, Mantovano,
I that loved thee since my day began;

and of Dante's rapturous plea to the shade of the poet:

Might it avail me that I long with zeal
Have sought thy volume and with love immense
Have conned it o'er.

For one man like Professor Knapp I am afraid that there are far too many whose reading does not go much beyond what their pupils are required to do. It is easy to master the amount of reading demanded by Requirements, and the temptation to stop at that minimum essential may be strong and insistent, if the teacher does not love what he is teaching. I suspect that not a few teachers yield to this temptation. I am not hazarding a scientific generalization. I am just trying to get off my chest something that has lain heavily thereon for many years. Perhaps my pectoral discomfort is more imaginary than real. I hope so, but I am not convinced.

It is well known that in many schools teachers who have "small Latin" and no Greek are forced to take a class or two in Latin. This unpleasing task for which they have little spiritual preparation some of them proceed to perform without any vigorous exertion to enlarge their meager store of Latinity. That such teachers can infuse a love for Latin which they do not have is a highly questionable *a priori* assumption. *Nemo dat quod non habet* is a truism as pertinent as it is trite. This is not said to disparage the efforts of those who have accepted wartime assignments in subjects outside their field. Good teachers can do excellent work even though they must break new ground, provided they really cultivate the ground.

Teachers who salve their consciences with the reflection that having read all the required books in college, their reading apprenticeship is over, and no more reading is to be expected of them, show that they have failed to grasp the rationale of required reading. It was the hope of their professors, too often vain, that prescribed reading in college would create a taste for the classics not to be satiated for life.

Our primary objective being to teach the reading of Latin, it would seem that teachers who do not themselves read extensively in Latin show by their example that they do not believe very strongly in the value of this objective. The influence of a well-read Latin teacher is bound to react favorably upon his pupils. Such a teacher brings into the classroom an atmosphere of inspiration.

—P. J. Downing,
The Browning School,
New York City.

English

The English Journal

Perhaps I am in an unusually querulous mood as I write this; at any rate, the September issue of The English Journal seems to me to contain little that is of any great help to such teachers of English as are likely to read the Bulletin. The leading article—on Thomas Mann—is an interesting and thoughtful estimate of the work of the German novelist. The rest of the issue, however, with one exception, seems to be devoted to articles of a sort which I, for one, am getting thoroughly tired of reading: the kind which tell you, in the first few sentences, that the author had been teaching literature or composition (or some particular bit of literature or composition) in an extraordinarily dull, stereotyped fashion; then, suddenly, one day, came the dawn, in the shape of a notion that literature (or composition) ought to be related to the pupil's experience. Now the author's classes are simply bubbling over with enthusiastic discussion, and many of the duller pupils have been heard to murmur that they didn't realize English could be interesting. This sort of thing is closely akin to the one about the couple who bought the old farmhouse for two hundred dollars and made something Pretty Palatial out of it, using as tools a toothbrush, a bedspring, and a bottle of hair tonic.

The sole exception mentioned is Professor Warren Beck's article, *Poetry's Chronic Disease.* This disease, Professor Beck says, is "poetic diction, in the sense of a vocabulary perpetuated for some supposedly intrinsic artistic merit." What the disease really consists of, however, if I read Professor Beck correctly, is lack of that vague but real quality which may be called genuine poetic feeling. Most of us, when we say "poetic diction," mean a consciously lush or consciously formalized language, which calls young men "swains" and young women "nymphs," and which uses "thee" and "thou." Wordsworth, the great crier-out against the sort of thing, frequently indulged in it:

> . . . Hast thou then survived —
> Mild offspring of infirm humanity,
> Meek Infant! among all forlornest things
> The most forlorn — one life of that bright star,
> The second glory of the Heavens? — Thou hast;

But a change from this sort of thing will not, of course, necessarily result in anything less poisonous:

> The clock is on the stroke of twelve,
> And Johnny is not yet in sight:
> — The Moon's in heaven, as Betty sees,
> But Betty is not quite at ease;
> And Susan has a dreadful night.

The essence of the matter seems to lie in Professor Beck's conclusion to his comments on specific poems of Dickinson and Frost: "These two poems . . . illustrate the fact that every good poem is *sui generis* unique, and show how futile is all imitativeness or affectation in art and what absolute sincerity is required in the making of a good poem."

—Hugh King Wright,
Lawrenceville School,
Lawrenceville, N. J.

Libraries

The sound of hammer on nail rings in the air these days as planks for post-war plans are fastened in place upon a thousand emerging platforms facing toward tomorrow. Librarians are no less busy than others in this respect: the September A. L. A. Bulletin and the September 15, Library Journal both carry digests of the forthcoming A. L. A. publication on standards for school libraries, prepared by Mrs. Mary Peacock Douglas in co-operation with several committees.

Vision and revision have gone into this statement, which promises to be well worth watching for. The Library Journal article, *School Libraries Today and Tomorrow*, presents a fairly generous résumé of the standards. Nothing brand new as of 1944 is to be found therein, but one has the impression that a goodly core of valid, up-to-date ideas have been well organized into a satisfactory set of agenda which make sense in almost any school situation. The function of the school library in the development of young people, its central position in relation to the work of the school, and the responsibilities of librarian, administration, and faculty are briefly and cogently outlined; nor are the time-honored matters of materials and money neglected.

All this is well and good, of course, provided the standards are not allowed to remain just standards, as has been widely the case. With this thought in mind, one progresses very naturally to a special plank nailed down by Margaret Kessler Walraven in the same issue of the Library Journal. Miss Walraven was enthusiastically mentioned in this column some time ago upon the publication of *Library Guidance for Teachers*, an excellent manual of which she was co-author. Not the guidance, but the whereabouts of teachers is her theme this time in an article entitled *Nonuse of the Library by Teachers: What can be done about it?—A plank for postwar planning.*

"Ask any ten school librarians," she challenges, "to canvass the list of their faculties honestly, name by name, and tell what percentages use the library in their teaching (1) not at all, (2) moderately, (3) systematically and enthusiastically . . . Can we fail to be concerned at the outcome of such a canvass, a canvass that will show a very small percentage in the third category?" To explain this condition, Miss Walraven adduces four reasons: Poor public relations on the part of librarians, narrow teacher education, lack of administrative support of the library, and lazy teachers. To remedy the trouble, she recommends study of the problem by a joint committee of the National Education Association, the American Library Association, and the American Association of Teachers Colleges, with a view to improving the library angle of teacher education.

It is doubtful whether this proposed remedy would have the desired effect, or that it would ever have any effect at all in the "independent" schools, so many of whose faculties assiduously eschew teacher-training. However, good public relations and real administrative co-operation have done and will still do a job. Good library

service will stand on its merits if its merits are effectively and faithfully demonstrated.

—Gerrish Thurber,
Lawrenceville School,
Lawrenceville, N. J.

Modern Languages

Danger and Opportunity

Two conflicting forces are affecting foreign language study today. The first and most noticeable is the trend toward the natural and social sciences. This is more than a continuation of a twenty-year-old movement away from the humanities. It is partly an immediate and specific answer to imperative military needs. This trend may well be expected to grow in the post-war period. The second is the demand for a very considerable number of linguists to aid military conquest and social and economic rehabilitation.

After the war these forces will not disappear. Indirectly they will continue to exert great influence on foreign language study—probably just as great as the direct influences of today. What will be the attitude of language teachers? What changes will there be in techniques and in the content of courses?

The ASTP courses in foreign languages have opened the eyes not only of students but of teachers. It has been proven that selected students can learn to speak and understand a foreign language in a surprisingly short time under favorable conditions. Insistence on the oral approach—and only on the oral—from the very beginning is the distinguishing feature of these courses. The student learns by hearing, imitating and repeating.

At first glance resemblances to the famous "direct method" are obvious. But there are fundamental differences. The "direct method" sought to accomplish orally in the foreign language what a traditional grammar course would do by translation. In the ASTP courses there is no interest in grammar *per se*. The goal is to learn to speak and understand. The content of the course is lively, factual, essential stuff which makes up the everyday experiences of living. Literature and "culture" take very much of a back seat.

Some schools and colleges are already adjusting their language courses and curricula so as to profit by the ASTP experience. There is no question of eliminating literature and culture, which retain their value and remain desirable goals. But the language will be approached first as a problem in speech. Grammatical accuracy, knowledge of rules, skill in translation, introduction to literature—these are for later stages. Emphasis will be put on the ability to speak intelligibly and to understand readily. The curricular adjustments which such a course demands are startling. Certain colleges contemplate granting two credits for a one-year course which will meet twice as frequently as the normal at present. In the secondary schools the solution to the problem is not so easy. However the signposts are everywhere to be seen, and schools will do well to heed them. Only thus can we offer a strong challenge to the movement toward the natural and social sciences, and incidentally improve our efficiency as language teachers.

—Harris H. Thomas,
Phillips Exeter Academy,
Exeter, N. H

The next issue of The Independent School Bulletin *will appear early in January.*